User's Manual
ECO MULTIFUNCTION
Scale

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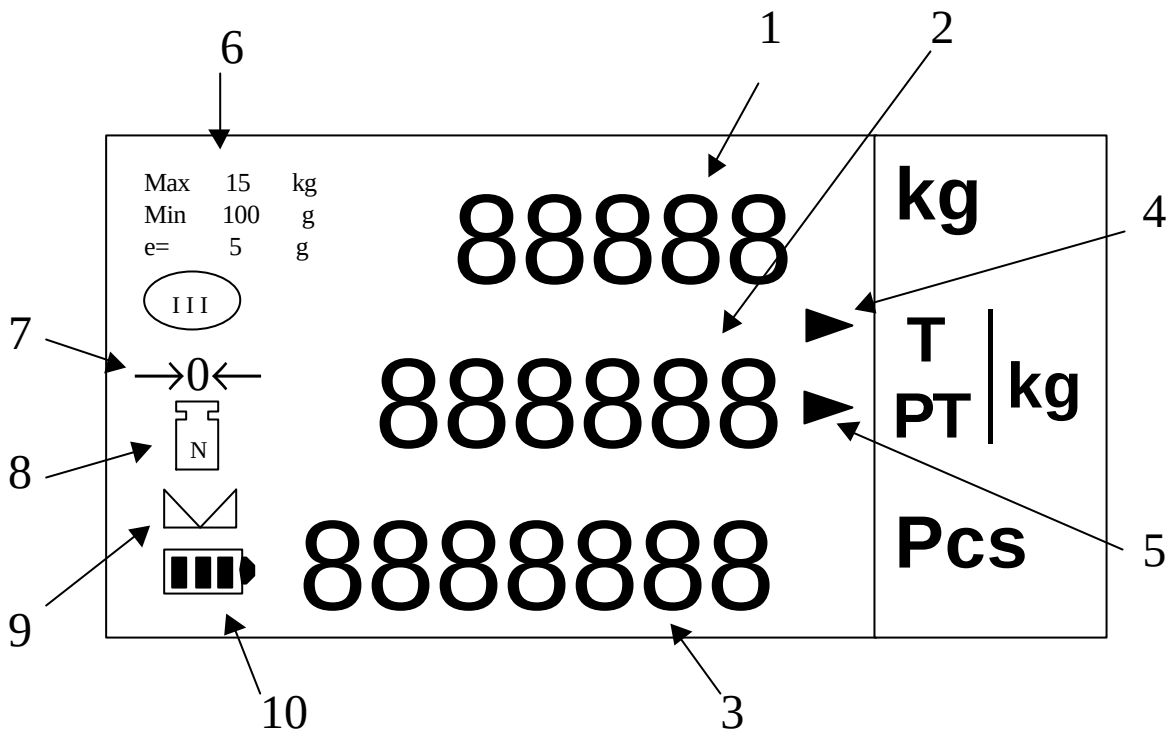
1. GENERAL

- Possibility of programming and storing 20 coded numeric tares.
- Possibility of programming and storing 20 coded levels (Under-Target-Over).
- Possibility of programming and memorizing 20 coded unit weights.
- Semi-automatic, cumulative, coded numeric and manual numeric tare.
- RS-232 connection for external communication.

NOTE: The RS-232 PC cable must be connected before powering on the scale.

- Internal power supply:
  - 5 x R-20 1.5V batteries.
  - Internal rechargeable battery 6V, 10A, (optional).
- External power supply:
  - Adapter 12Vdc, 220V.
  - External battery 12Vdc.

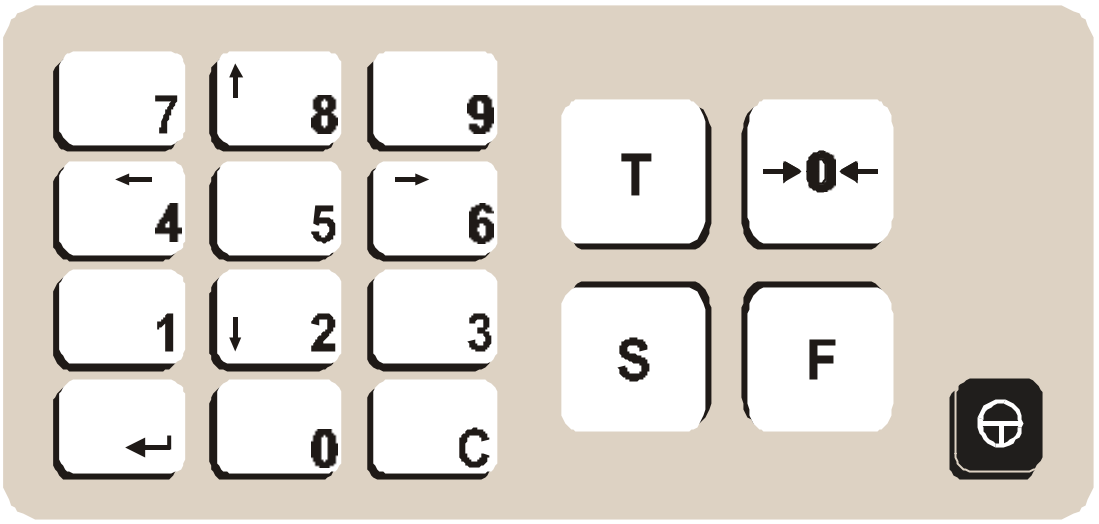
2. DESCRIPTION OF THE DISPLAY



The ECO scale's display is as shown in the figure above and consists of:

1. Weight display: 5 digits.
2. Price display: 6 digits.
3. Amount display: 7 digits.
4. Semi-automatic tare indicator.
5. Numeric or coded tare indicator.
6. Special scale indications.
7. Zero weight indicator.
8. Net weight indicator.
9. Stable weight indicator.
10. Battery status indicator.

3. DESCRIPTION OF THE KEYPAD

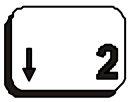


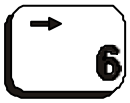
The unit has a 17-key keypad whose functions are the following:

…….. Scale ON/OFF key.

… Numeric keys for entering numeric data.

…….. Forward cursor for options with preset values.

 ……. Back cursor for options with preset values.

 …….. Menu scroll forward cursor.

……. Menu scroll backward cursor.

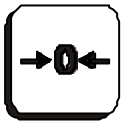
…..……. Key for erasing numeric values.

…… Data confirmation key. Menu entry.

…….. Manual value entry. Return to the work mode.

……. Tares.

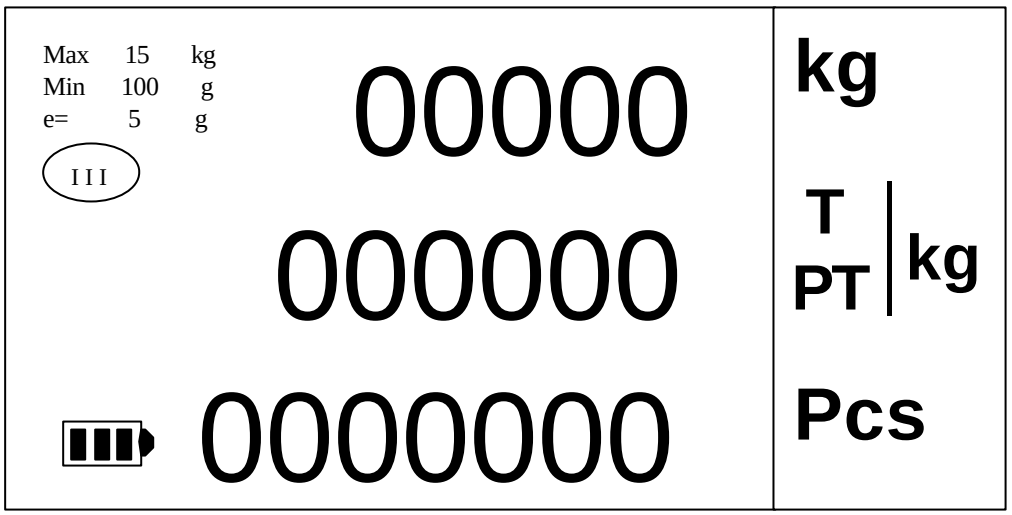
…..……. Recall memorized levels and unit weights. Sequential viewing of Over, Under and Target values. Entry in part counting by comparison.



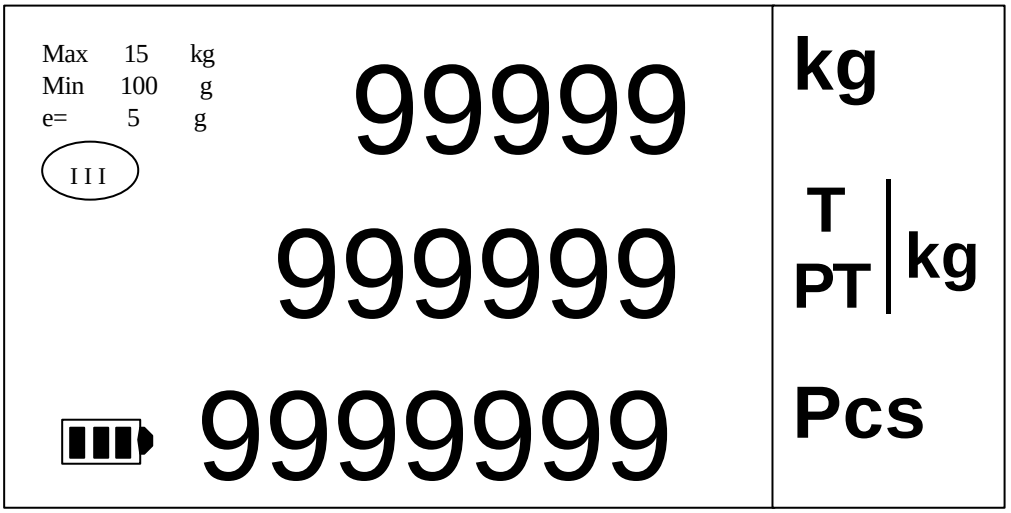
…… Autozero.

4. TURNING ON THE SCALE AND BOOT SELF-TEST

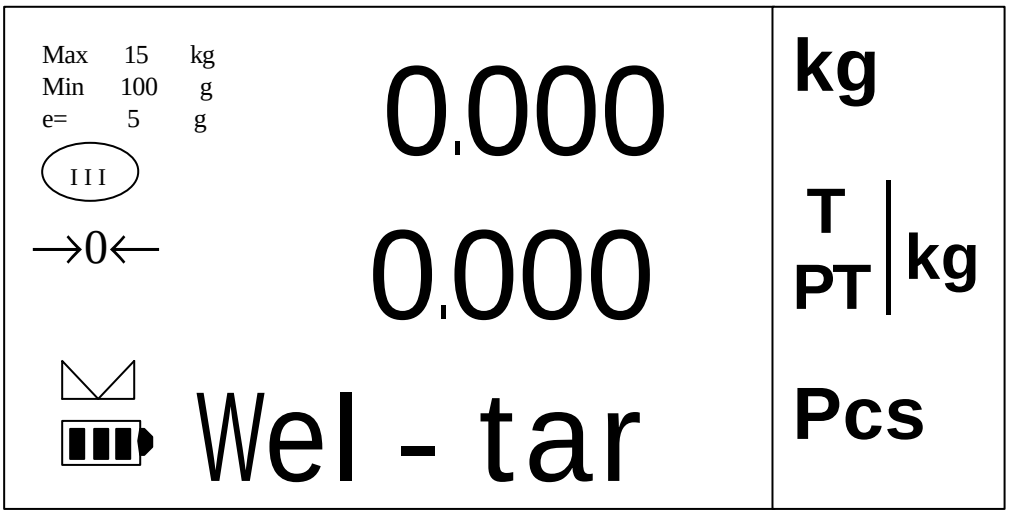
The scale is turned on and off by pressing the key. When turned on, it starts a cycle tests (it counts from 0 to 9).



……



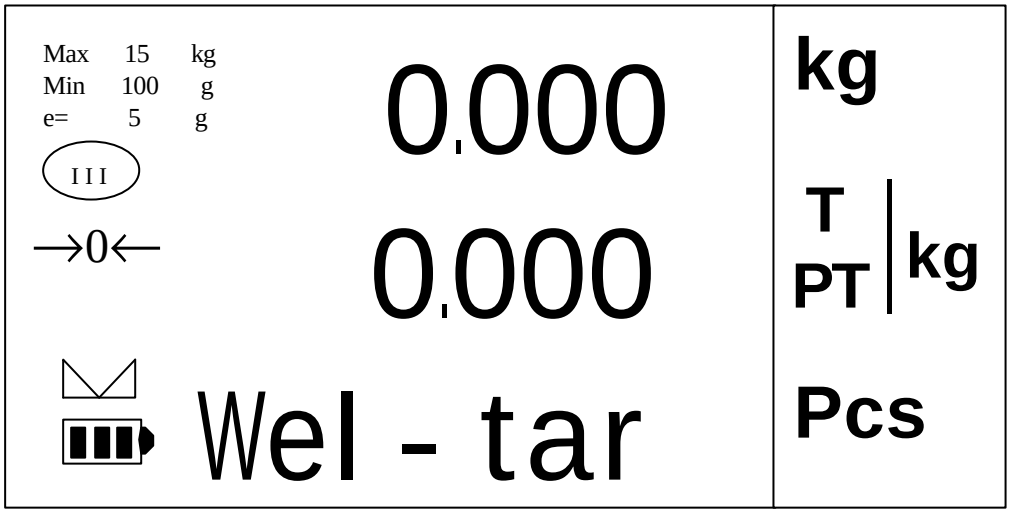
Upon completing the test, the scale autozeroes and stops in the normal work mode.



5. BASIC WEIGHT-TARE MODE

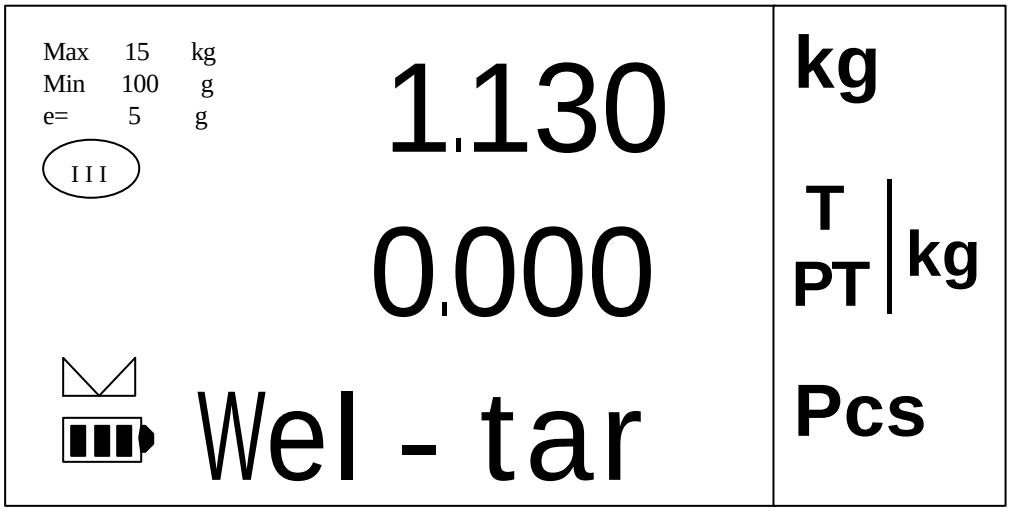
Select this work mode in the Menu's '**WORK MODE PROGRAM**' option.

In this work mode, it is possible to work with Semi-automatic Tare and Coded and Manual Numeric Tare. It is not possible to mix tares, that is, if there is a prior semi-automatic tare, it is not possible to perform a numeric tare, and vice-versa. In this basic mode, the display shows the net weight and value of the tare.



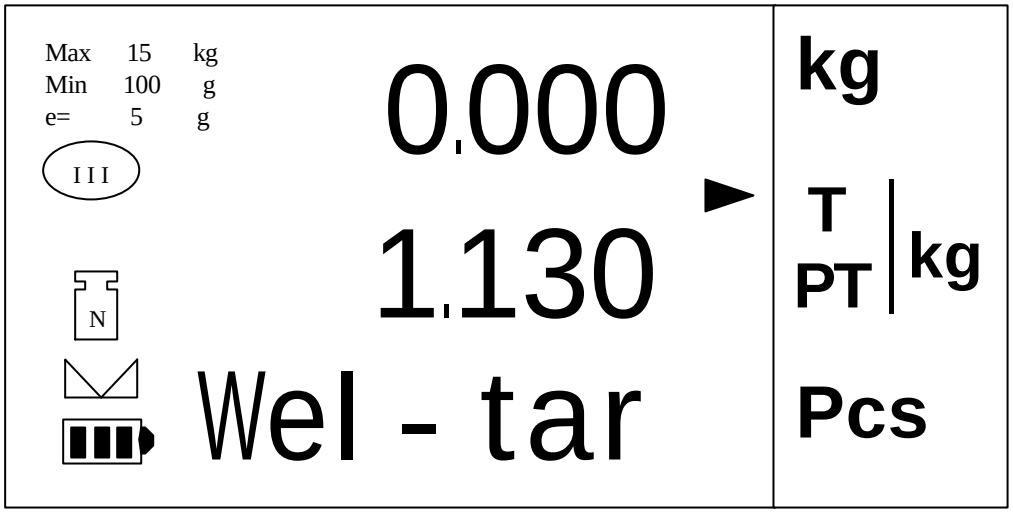
5.1. SEMI-AUTOMATIC AND CUMULATIVE TARE

Place the weight to be tared on the platform (for example: 1.130 kg):



Press the

key; the display will show the following:

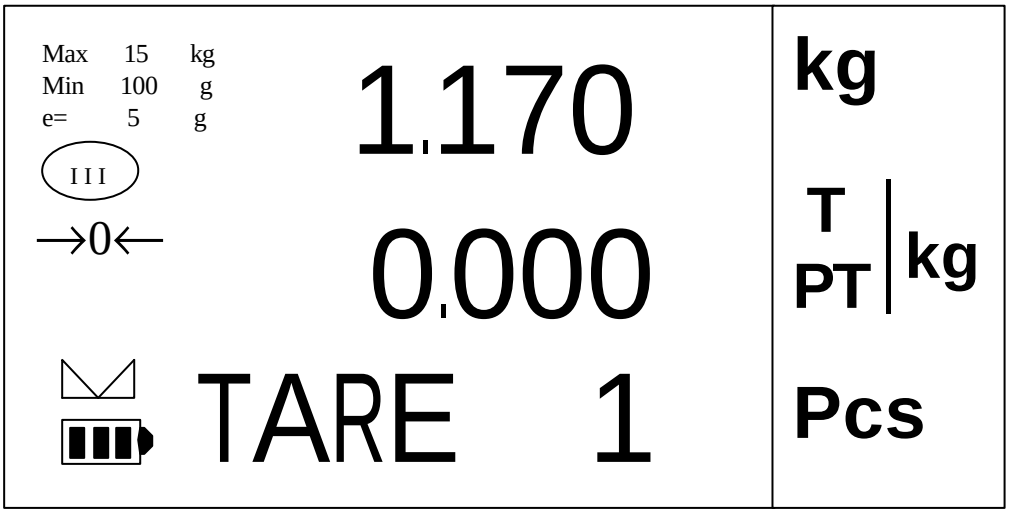


The weight display zeroes and the value of the tared weight is shown on the tare display. The tare display's top indicator lights to indicate that there is a semi-automatic tare. This process can be repeated as many times as may be necessary (until the limit indicated in the section **'TARE LIMITS**' is reached) to give the cumulative tare.

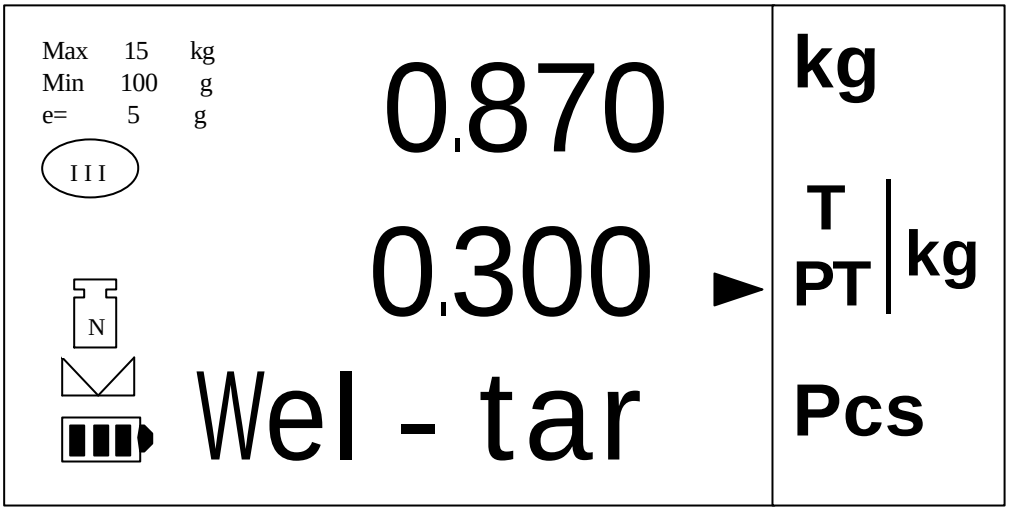
If at this point (net weight = 0), you press the T key again, the tare (semi-automatic or cumulative) is fixed. In this case, the indicator will blink to indicate that the tare is fixed. To erase the tare, remove the weight from the platform and, if the tare is not fixed, it is erased automatically. If the tare is fixed, you must press the T key again after removing the weight.

5.2. CODED NUMERIC TARE

To recall a Coded Numeric tare, enter the tare's code (1...20), for example, tare 1, 0.300 kg:



and then press the T key.



The tare display's bottom indicator lights to indicate that a numeric tare has been performed. If you press the T key again, the numeric tare is fixed and the indicator will blink to indicate that the tare has been fixed.

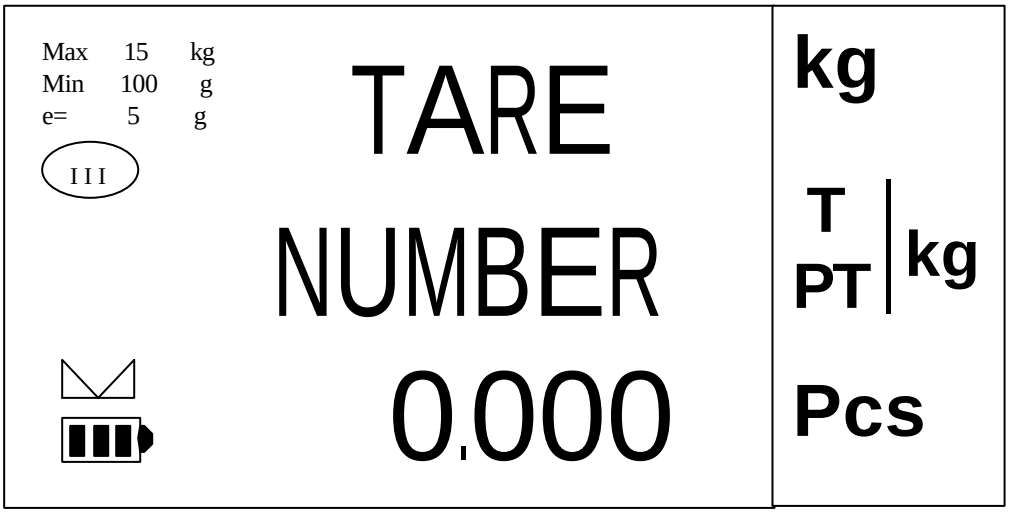
To erase the numeric tare, proceed as described in the section Semi-Automatic Tare.

So long as the tare is not fixed, it will be possible to recall any other coded tare. If a Coded Numeric tare is fixed, it will not be possible to recall another Coded Numeric tare.

5.3. MANUAL NUMERIC TARE

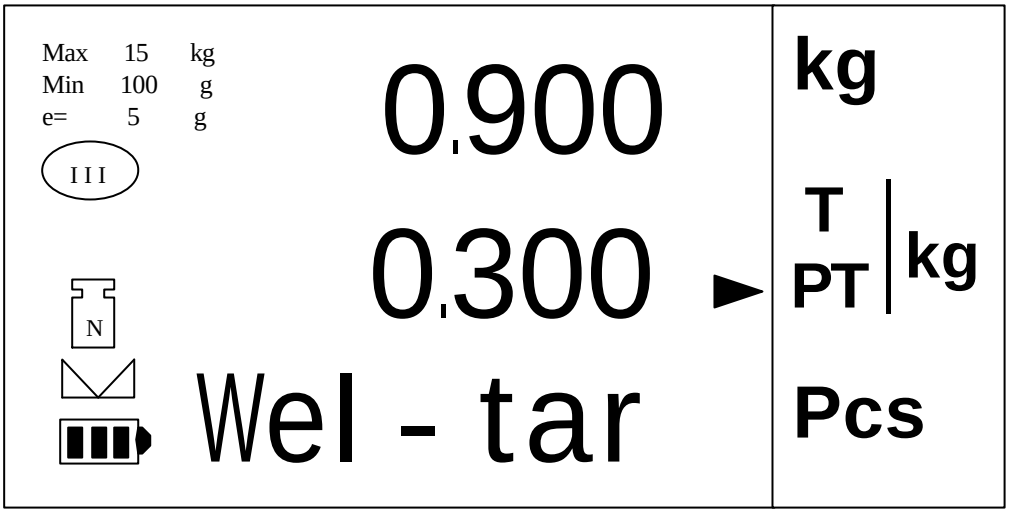
To enter a numeric tare manually, there must not be any coded numeric or manual tare fixed beforehand.

Press the S key:



At this point, enter the value of the tare using the numeric keys and then the

key (for example, with a weight on the platform of 1.200 kg, enter and confirm a tare of 0.300 kg):



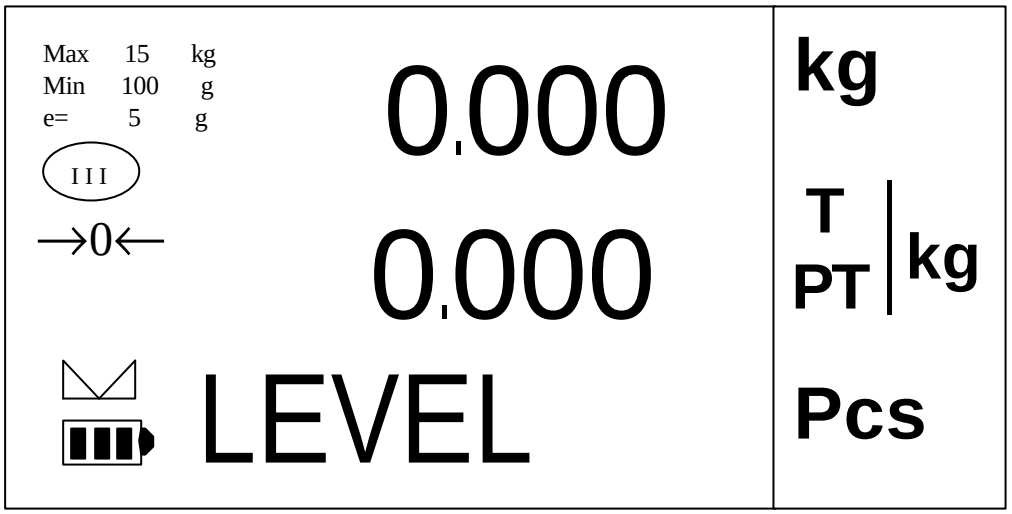
To fix or erase the tare, proceed in the same manner as for the previous cases.

5.4. TARE LIMITS

	MAXIMUM TARE	
CAPACITY	**NORMAL**	**MULTI-RANGE**
3 kg	**3 kg**	**Not available**
6 kg	**6 kg**	**1 kg**
12 kg (6000 div)	**6 kg**	**Not available**
15 kg	**15 kg**	**3 kg**
30 kg A (3000 div)	**30 kg**	**6 kg**
30 kg B (6000 div)	**15 kg**	**Not available**

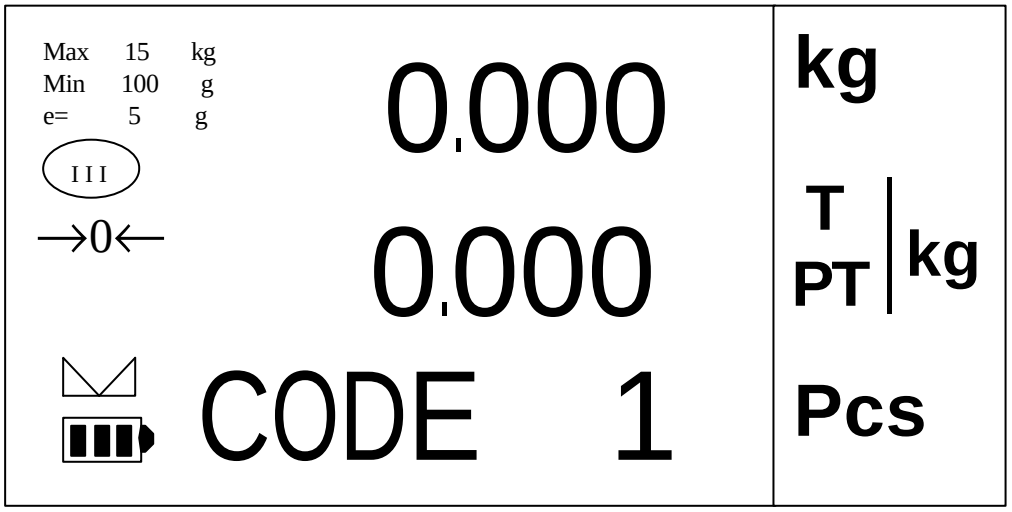
6. BASIC MODE LEVELS

Everything that has been explained in the Basic Mode Weight-Tare concerning Semi-Automatic and Cumulative Tare, and Coded Numeric Tare is valid for this work mode. In addition, in this work mode, the scale gives a visible and audible indication of weight values between two given values called Under and Over, and a central value called Target.



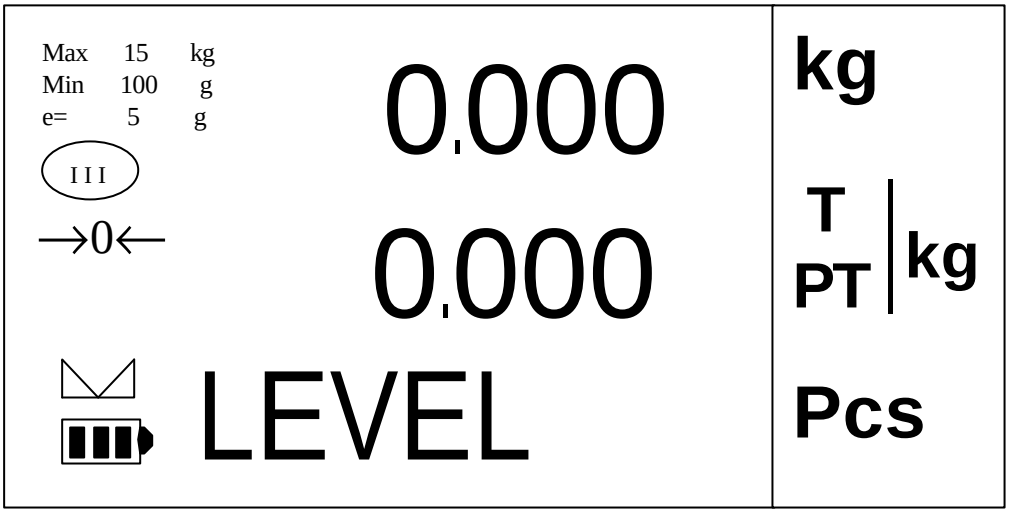
6.1. MEMORIZED LEVELS

To recall a memorized level, enter the level's code using the numeric keypad (for example, level 1):

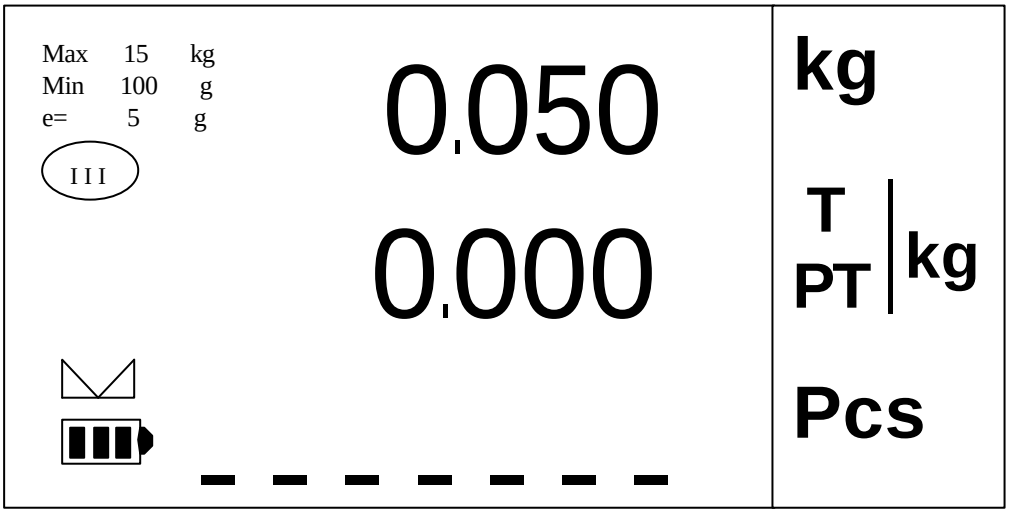


and then press the

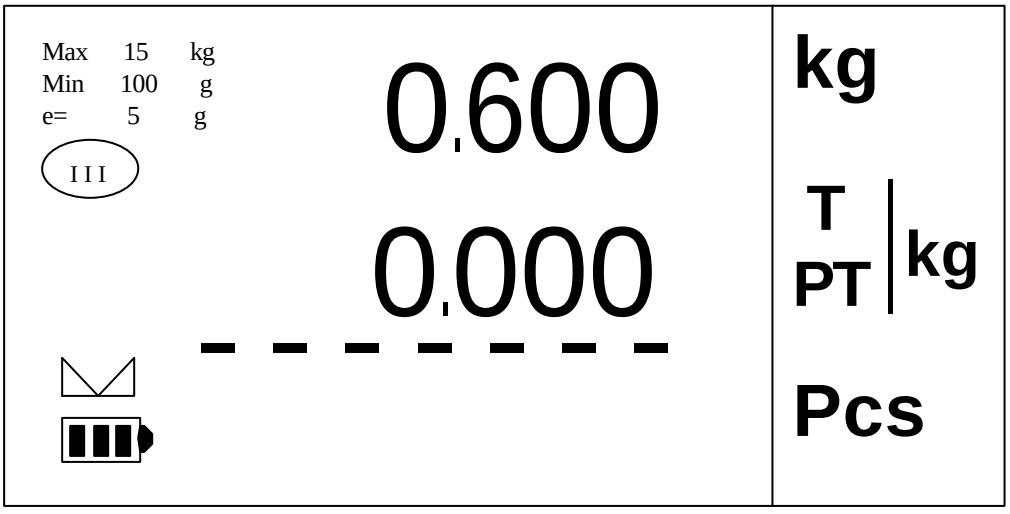
key:



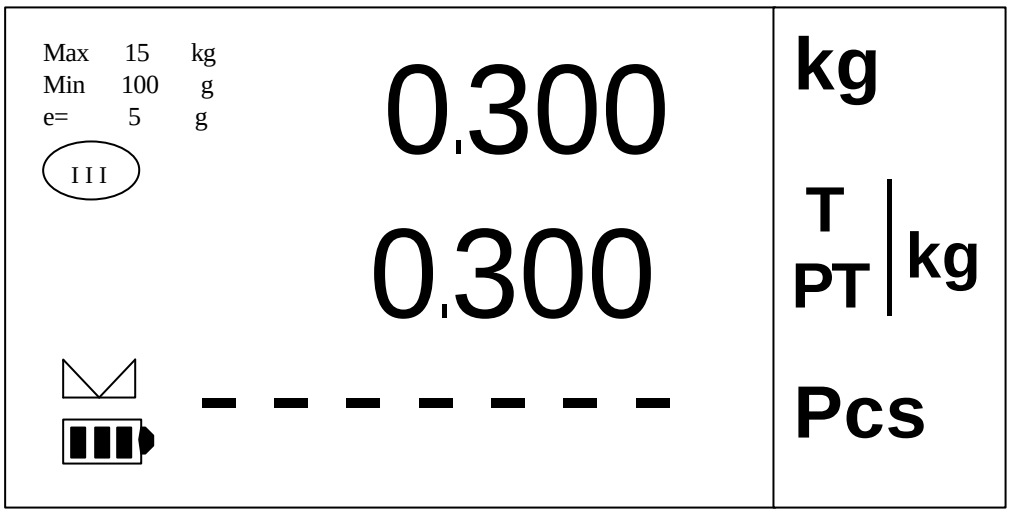
From this point onwards, if this code has memorized levels, the scale will display low dashes if the weight is less than the Under weight memorized (for example, a memorized Under weight of 0.100 kg and a weight on the platform of 0.050 kg):



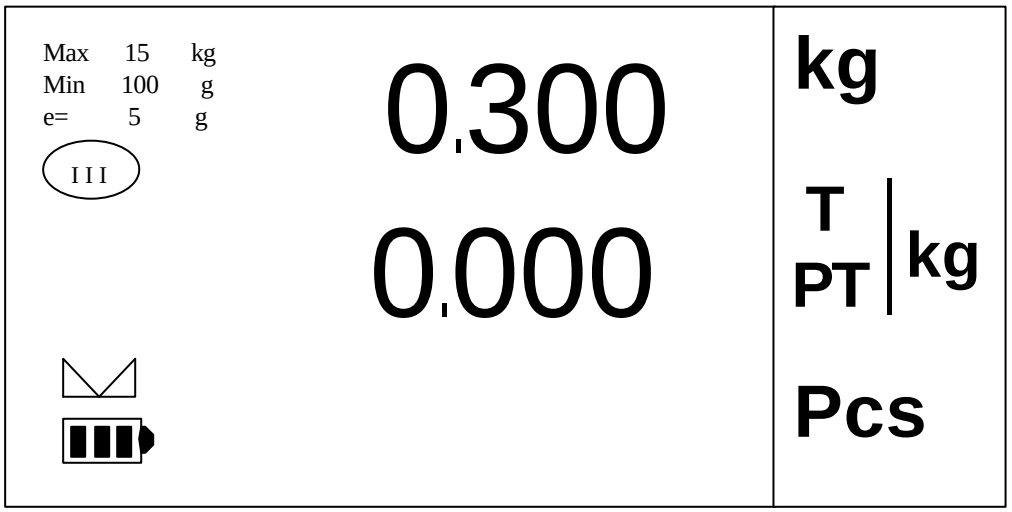
High dashes if the weight exceeds the Over weight value memorized (for example, a memorized Over weight of 0.500 kg and a weight on the platform of 0.600 kg):



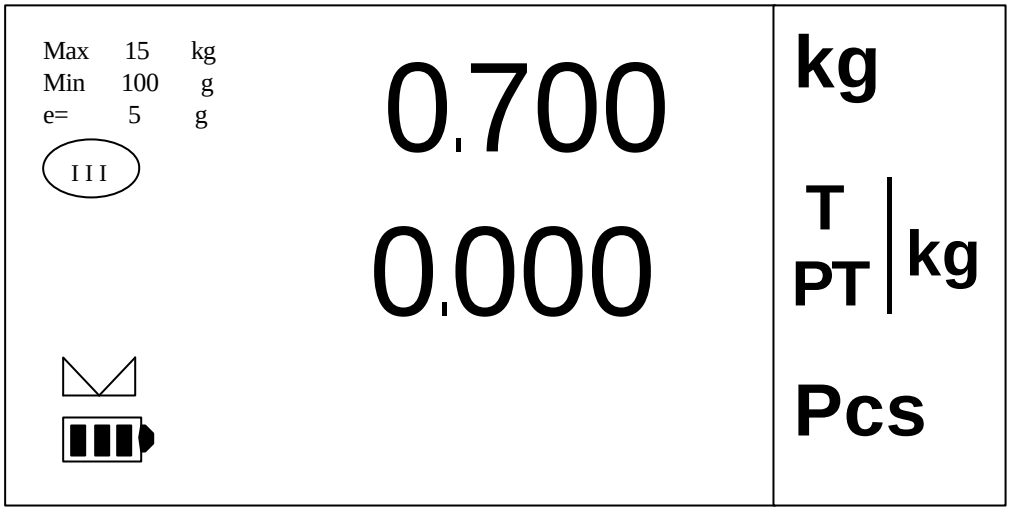
If the weight matches the Target value memorized, the scale displays center dashes and a continuous beep sounds, if the option is enabled (for example, with a memorized Target value of 0.300 kg and a weight on the platform of 0.300 kg), the scale will sound a beep if the option is enabled and will display:



If the weight is less than the Target value memorized and greater than or equal to the Under value memorized, the scale will beep intermittently (if the option is enabled) and will display arrows pointing downwards (for example, an Under Weight of 0.100 kg, a Target value of 0.500 kg, and a weight on the platform of 0.300 kg):

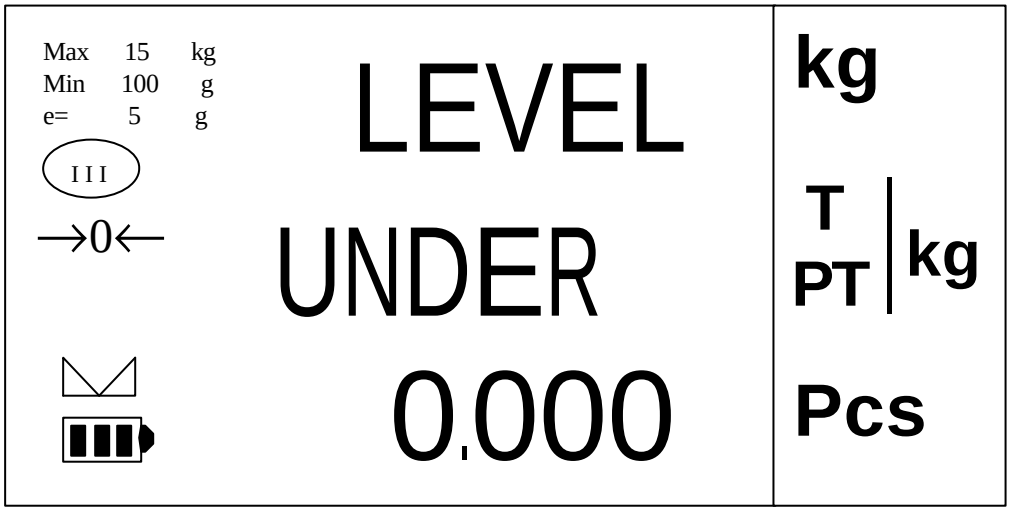


If the weight is greater than the Target value memorized and less than or equal to the Over value memorized, the scale will beep intermittently (if the option is enabled) and will display arrows pointing upwards (for example, an Over Weight of 0.900 kg, a Target value of 0.500 kg and a weight on the platform of 0.700 kg):



6.2. MANUAL LEVEL

To enter a Level value manually, press the S key from the basic work mode with Levels:



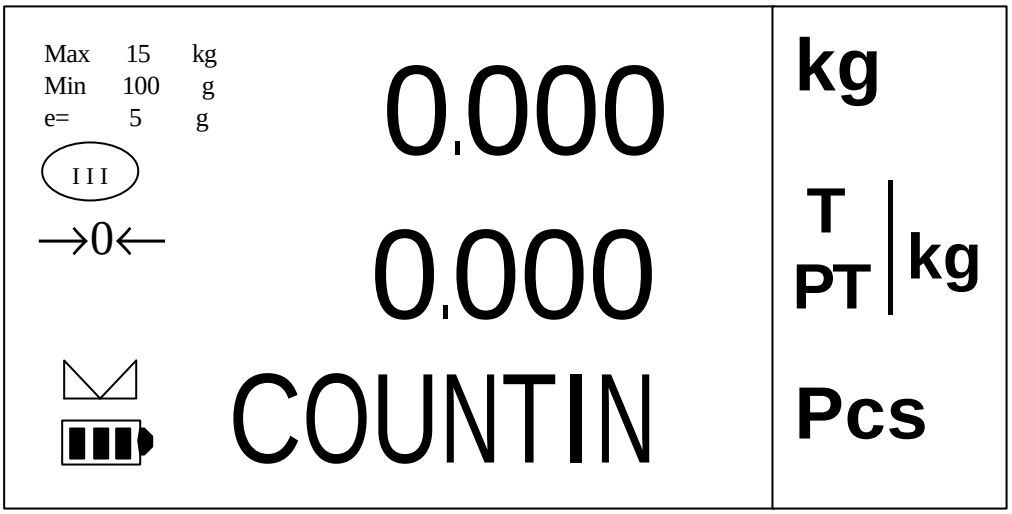
Pressing the F key repeatedly, you will cycle through the Over, Under and Target values.

The values are entered using the numeric keypad and, when all the values have been programmed, confirm by pressing the ↵ key.

7. BASIC MODE PART COUNTING

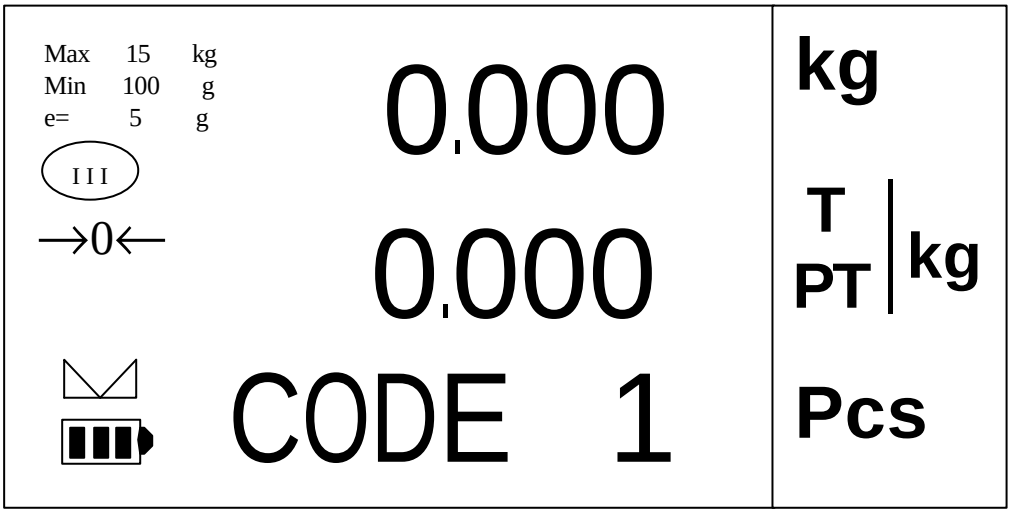
In this work mode, it is possible to work with Semi-Automatic Tare and Coded Numeric Tare. The procedure is similar to that explained in the basic mode Weight-Tare. It is not possible to mix tares, i.e., if there is a prior Semi-Automatic Tare, it is not possible to perform a numeric tare, and vice-versa.

In this basic mode, it is possible to count parts by the comparison method or working directly with the part's unit weight, recalling it from the memory (maximum 20 codes) or entering it manually.

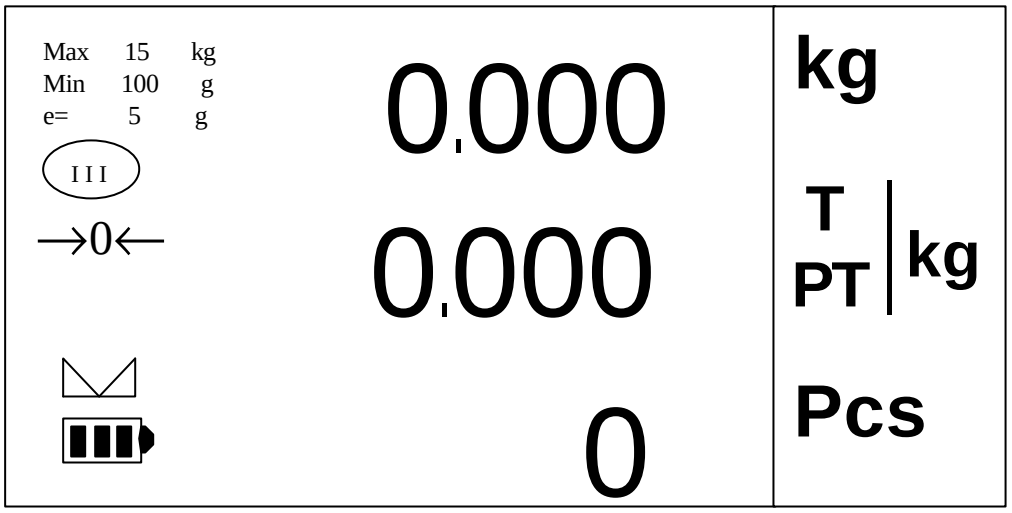


7.1. MEMORIZED UNIT WEIGHTS

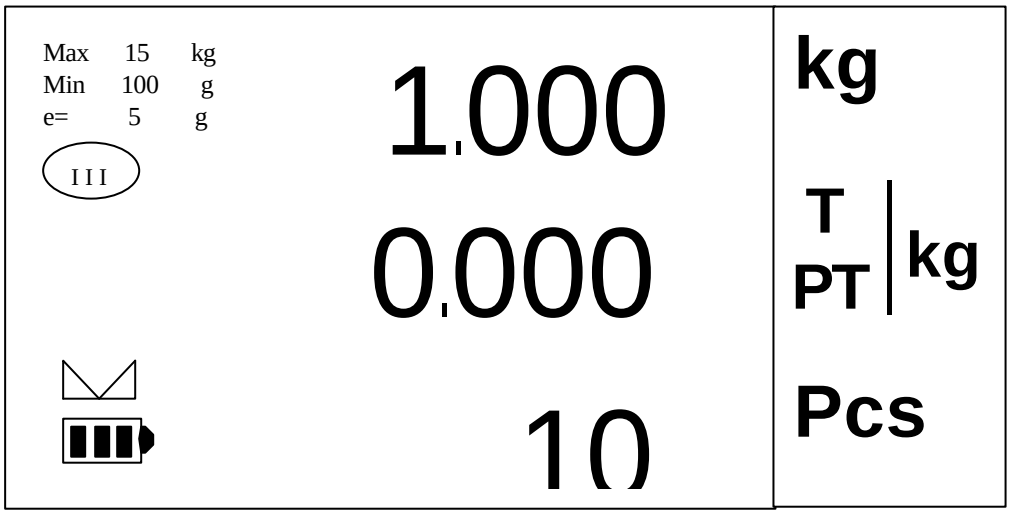
To recall a memorized unit weight, enter the unit weight's code using the numeric keypad (for example, code 1):



and then press the key.



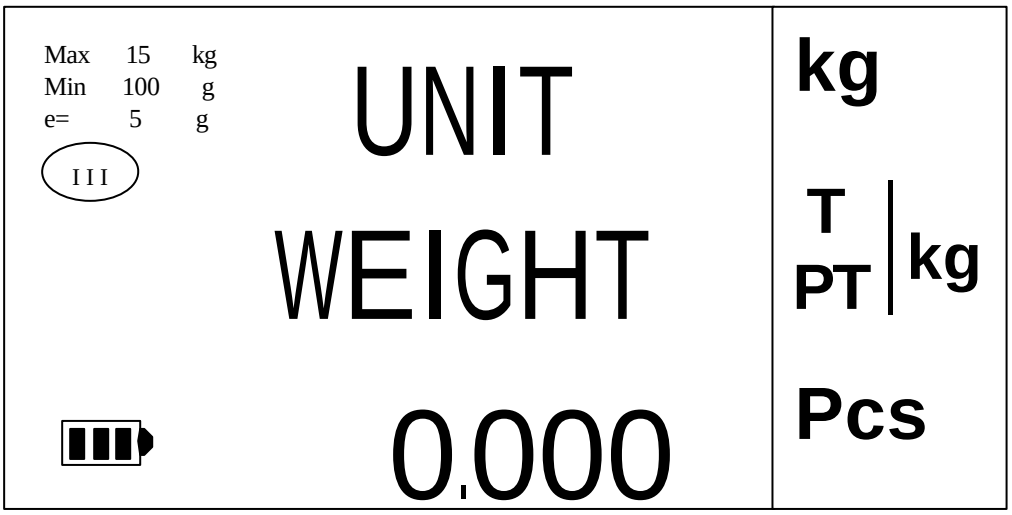
From this point onwards, if this code has an unit weight programmed, the scale will display the weight, tare (if any) and number of parts (for example, with a weight of 1.000 kg on the platform and an unit weight of 100 g):



7.2. ENTERING A MANUAL UNIT WEIGHT

To enter a manual unit weight, press the

key:



Enter the unit weight with the numeric keys and confirm by pressing the key.

The unit performs the same function explained in the previous section.

NOTE: The unit weight is reduced to a thousandth. In other words, 1.000 does not mean 1 kg, but 1 gram. The minimum unit weight for all capacities is limited to 1 g. The scale has a resolution of 60000 internal points and a full-scale error (Em):

Em=Sm*100 / 2*Pdm

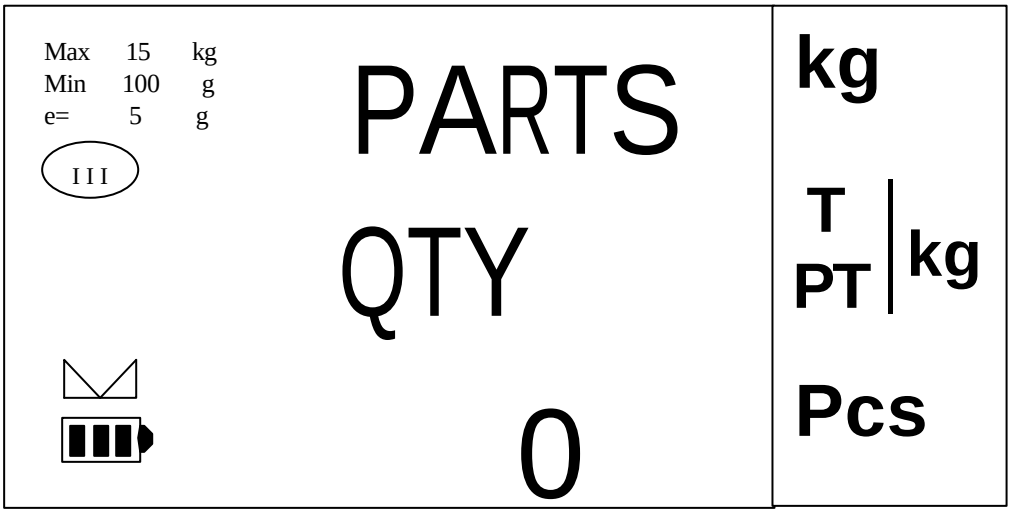
Where:

Em = error converted to % weight.
Sm = scale step.
Pdm = weight shown on part display.

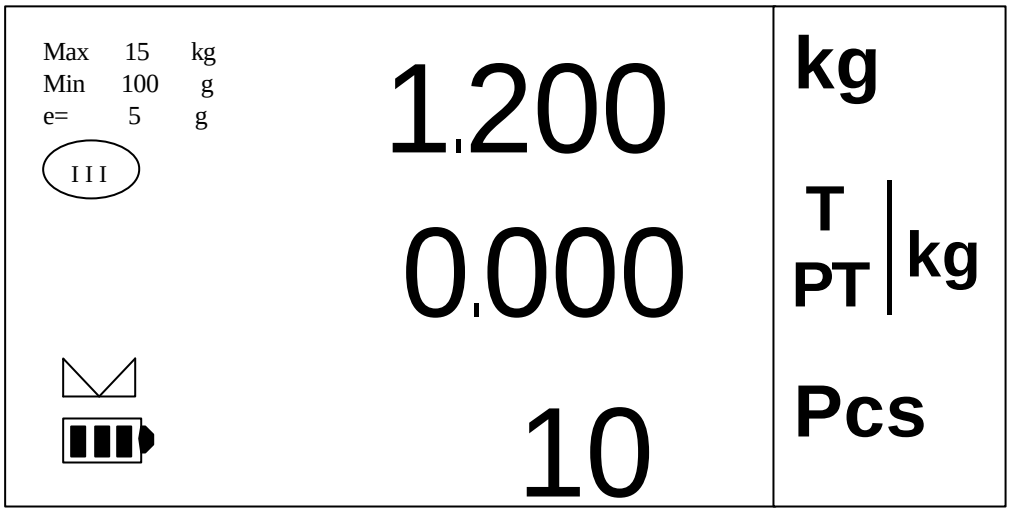
Always provided that the parts have an uniform shape and the same weight.

7.3. PART COUNTING BY COMPARISON

With a sample of the parts on the platform (with a total weight, for example, of 1.200 kg), press the key:



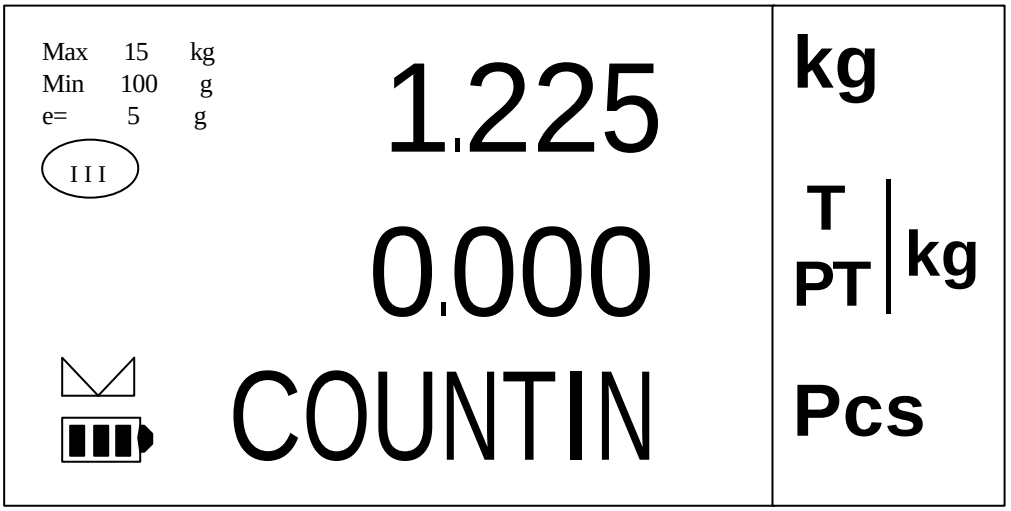
Enter the number of parts in the sample placed on the platform and press the key (for example, 10):



From this point onwards, you can add or remove parts and its quantity will be recalculated automatically each time on the basis of the sample entered.

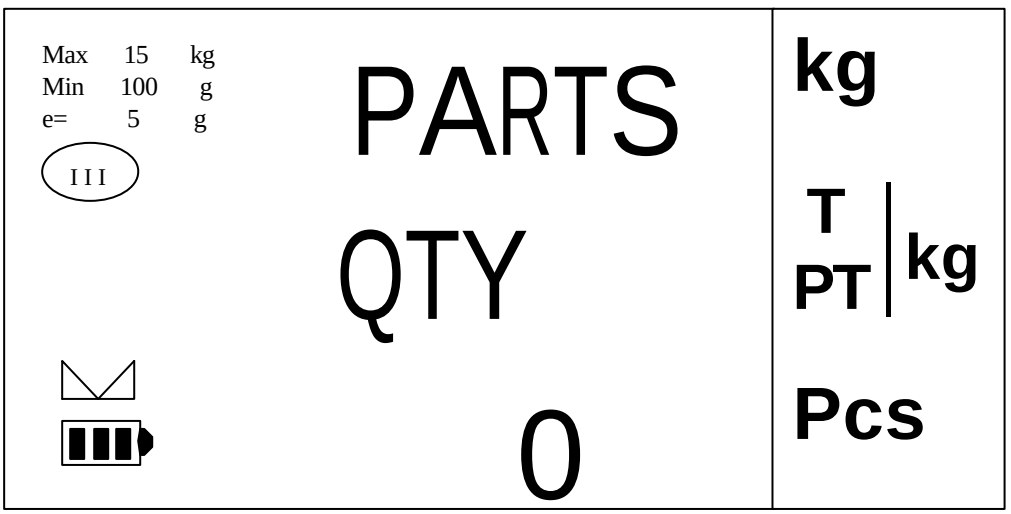
It is possible to memorize the unit weight calculated in one of the 20 codes reserved for unit weights. The procedure is as follows:

From the part counting mode, with a sample of parts on the platform:

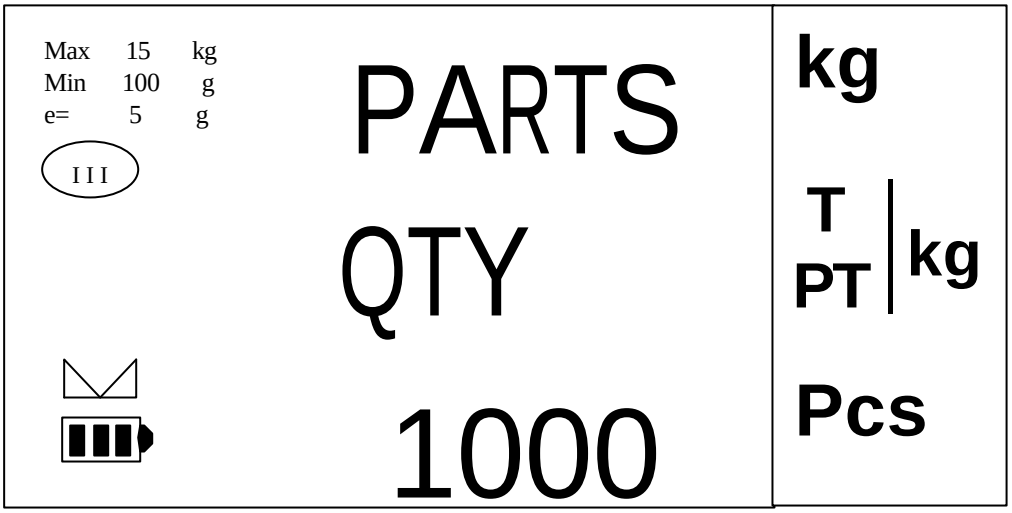


Press the

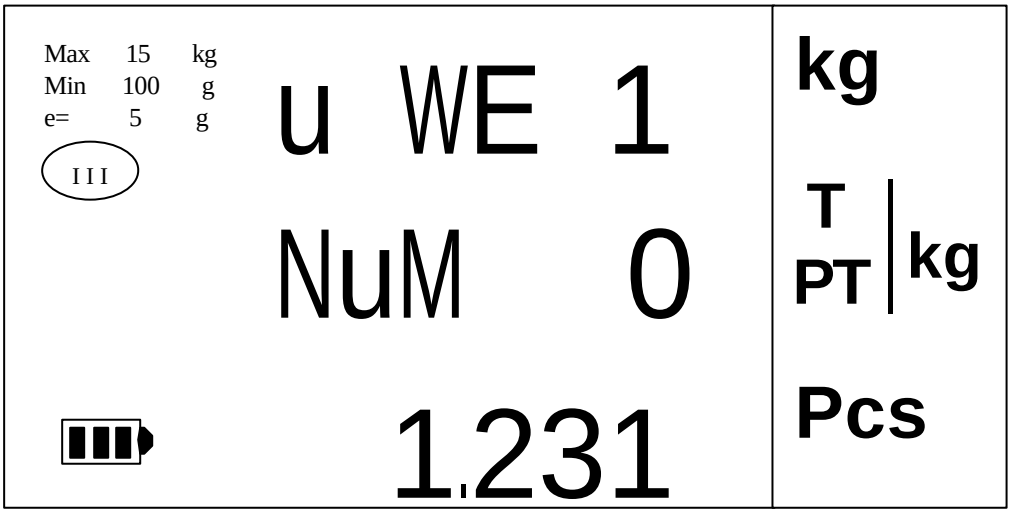
enter the part counting mode by comparison:



Enter the number of parts in the sample placed previously (e.g. 1000) using the numeric keys:



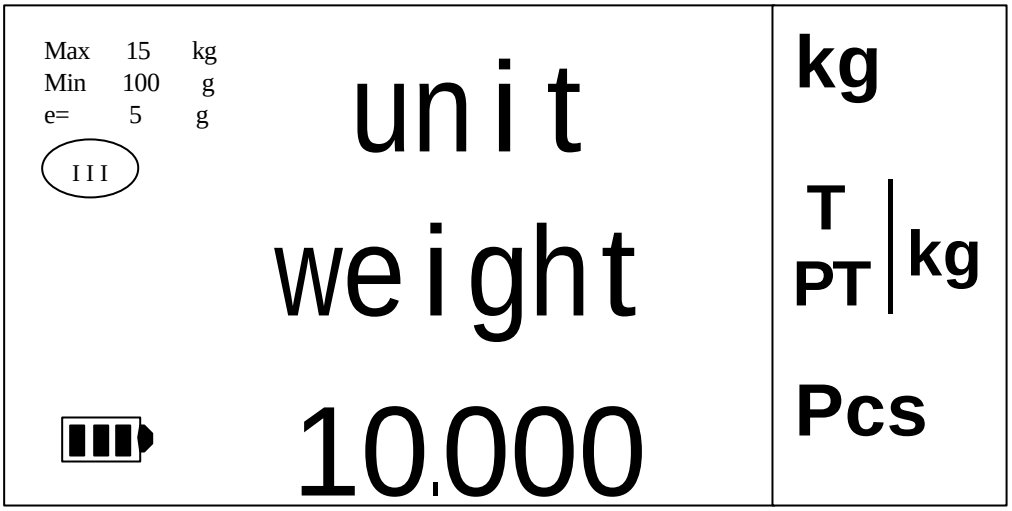
Press the F key to enter a special mode where you will see and assign the unit weight calculated to a code:



Enter the code number and confirm with the ↵ key. You return to the normal "Part counting" operating mode.

7.4. DISPLAYING THE UNIT WEIGHT

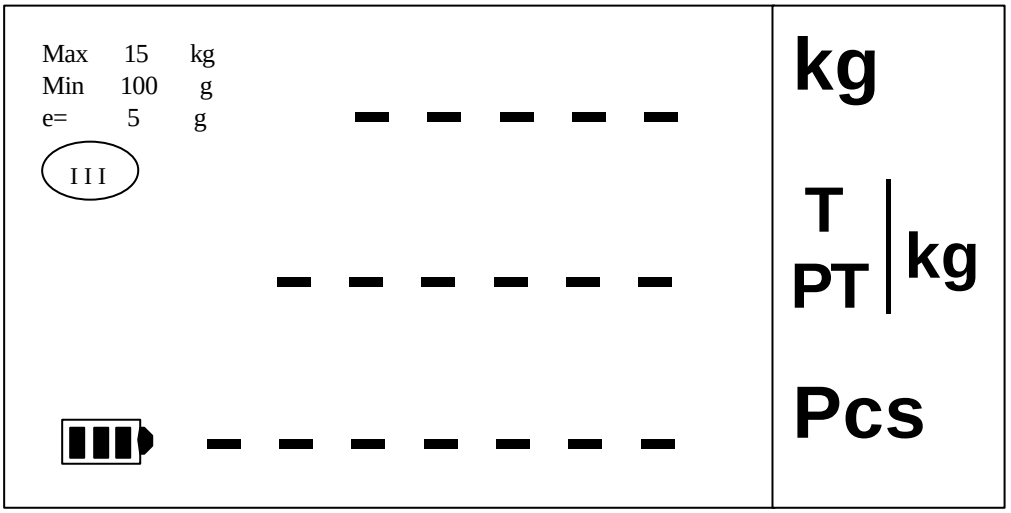
When operating with memorized unit weights or entering an unit weight, you have the possibility of seeing at any time the active unit weight, for approximately 2 seconds, by pressing the 0 key:



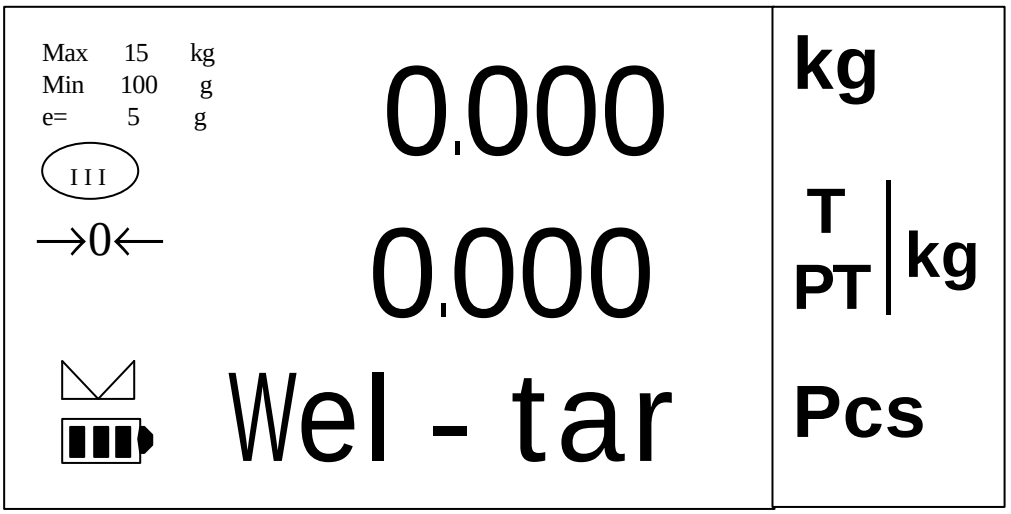
8. AUTOZERO

You can key zero from any work mode by pressing the →0← key:

After you have pressed the key, the scale will display dashes for a brief period:



To zero immediately, absorbing whatever weight might be on the platform:

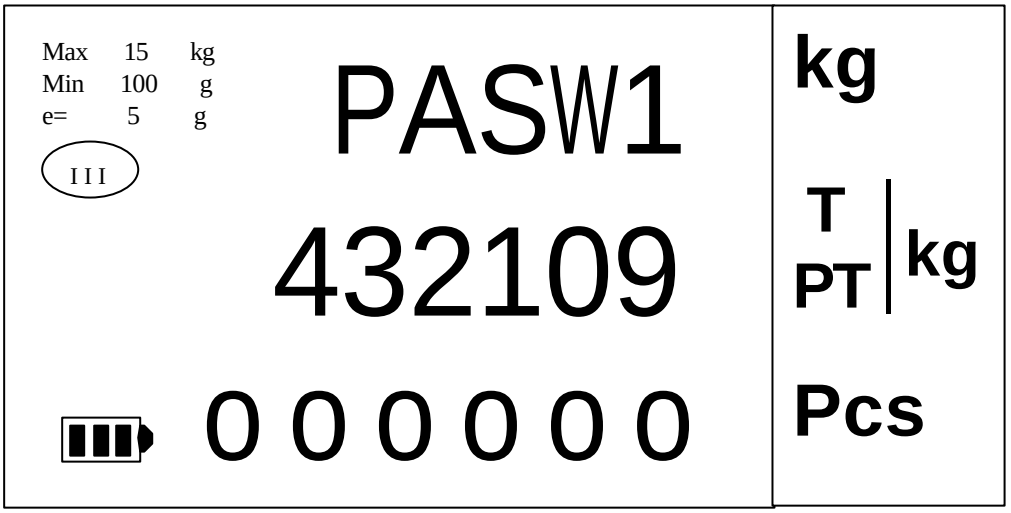


9 MENUS

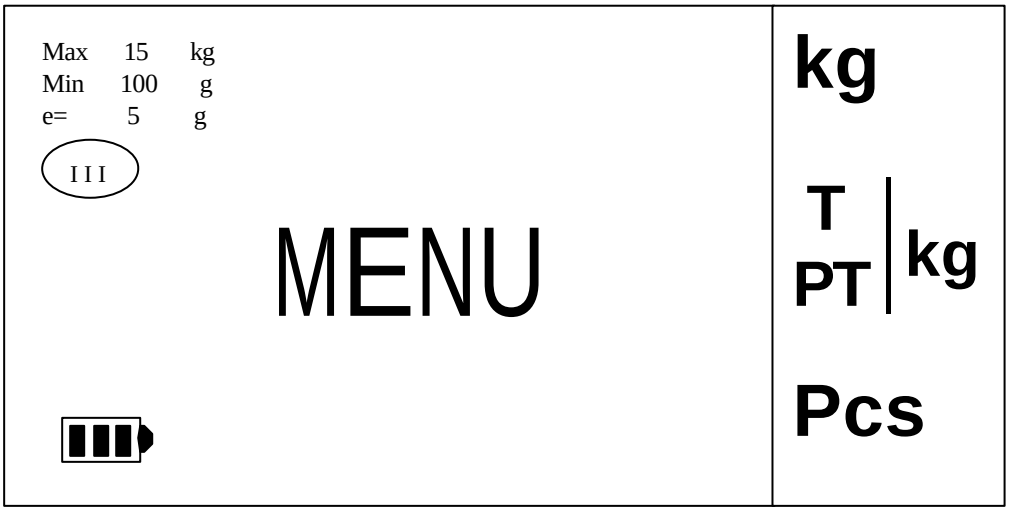
NOTE: The number appearing on the Tare display when you are prompted for the password to either of the two menus is the encrypted code whose purpose is explained in a later section.

9.1 1st LEVEL MENU

To enter the programming menu, you must press the key from any basic work mode. You will be prompted for the password, if it is enabled:



Enter the 6-digit password programmed using the numeric keys and then confirm with the key. You will enter the 1st level menu:



If you enter an incorrect value, you can erase it to re-enter the correct value by pressing the key.

You can also abort the menu entry operation, returning to the basic work mode, by pressing the

key.

At this point, you are now in the 1st level menu. To access the parameters, press the

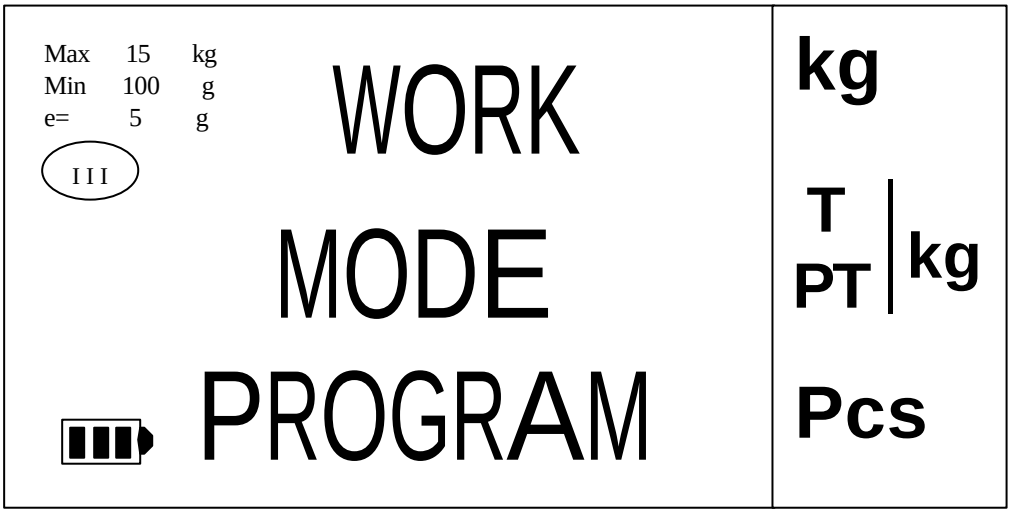
(cursor forward) and

(cursor back) keys.

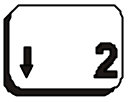
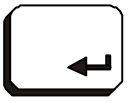
Scrolling through the menu, the first parameter you will find will be to choose the basic work mode:

9.1.1. Basic Work Mode

You can choose between 3 basic work modes: Weight-Tare, Levels and Part Counting. By default, you will be in the Weight-Tare mode:



Press the key to enter the option. The scale will display the current work mode:

Toggle between the 3 options using the and  keys and confirm with the  key. You will return to the Menu Mode with the data saved.

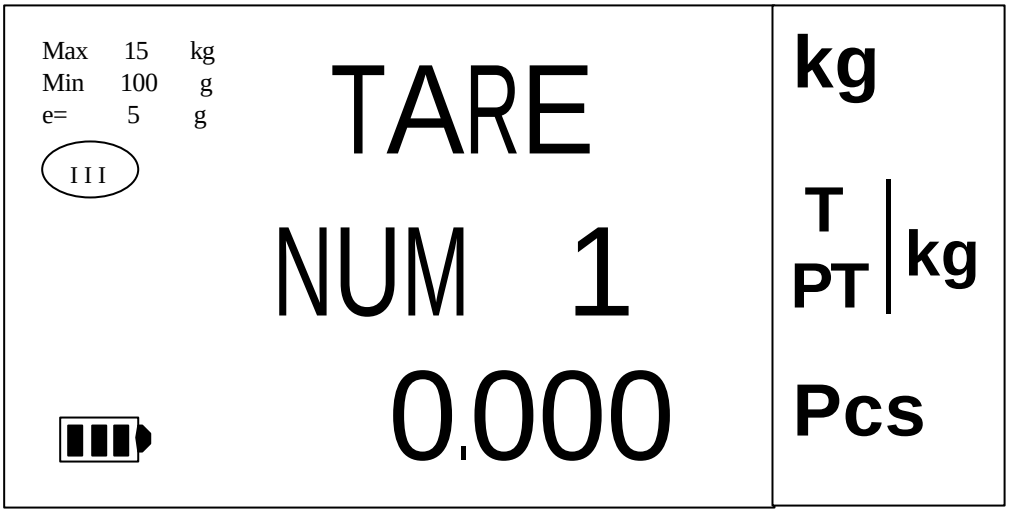
You can abort the operation at any time and return to the Menu Mode by pressing the key.

9.1.2. Programming Tares

You can program up to 20 coded numeric tares. When you are in the option:

Press the key. The scale will prompt for the Tare number to be programmed (from 1 to 20):

Enter the number with the numeric keys and confirm with the key. The scale will prompt for the Tare's value:



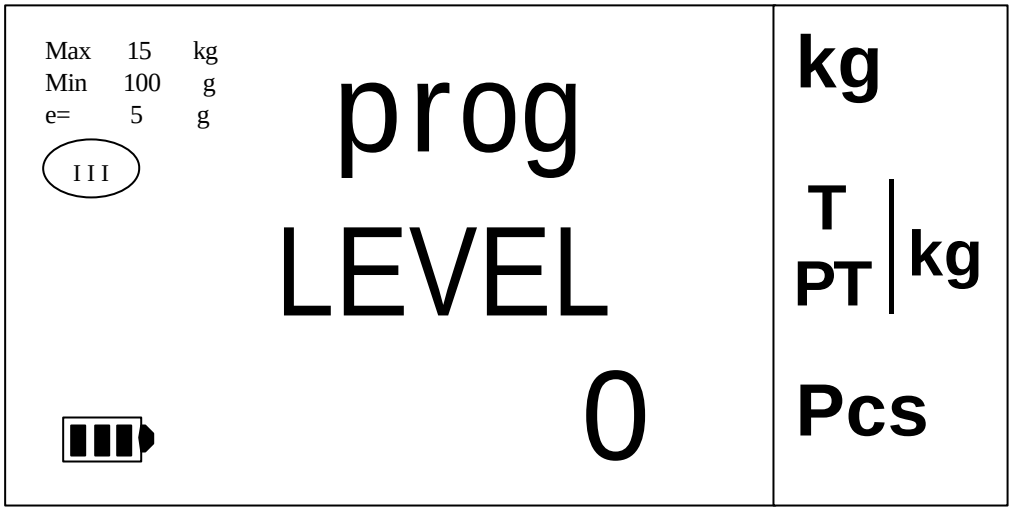
Enter the value with the numeric keys. If you make a mistake entering the price, you can erase it by pressing the C key.

After you have entered the value, confirm by pressing the key. The scale will prompt you to program the next Tare. You can exit the option at any time, saving the data confirmed so far, by pressing the S.

9.1.3. Programming Levels

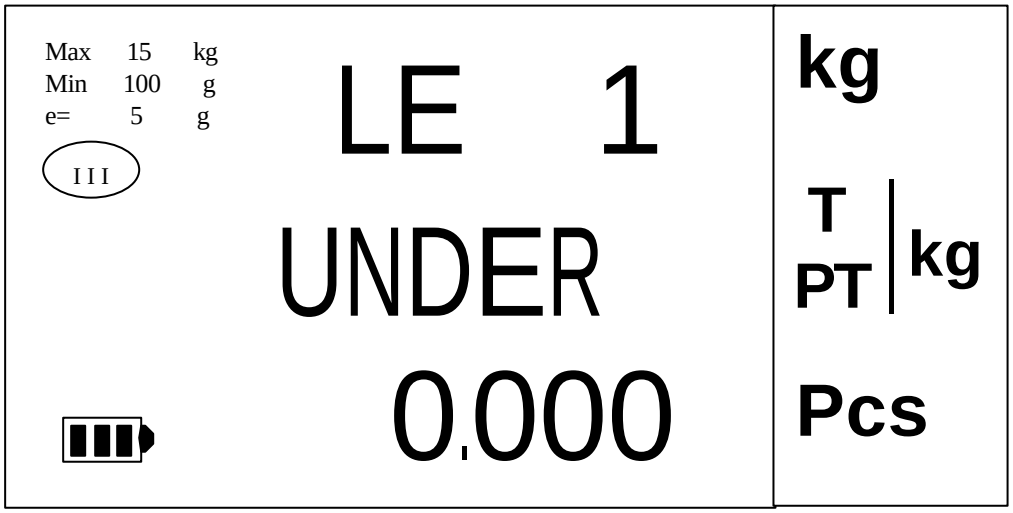
You can program up to 20 coded levels (Under-Target-Over). When you are in the option:

Press the key to enter the option. The scale will prompt for the Level number to be programmed (from 1 to 20):



Enter the number with the numeric keys and confirm with the

key. The scale will prompt you to program the Under value:



Enter the value with the numeric keys. You will now have 2 options:

A.- Confirm the value with the key and program the Under value of the following level.

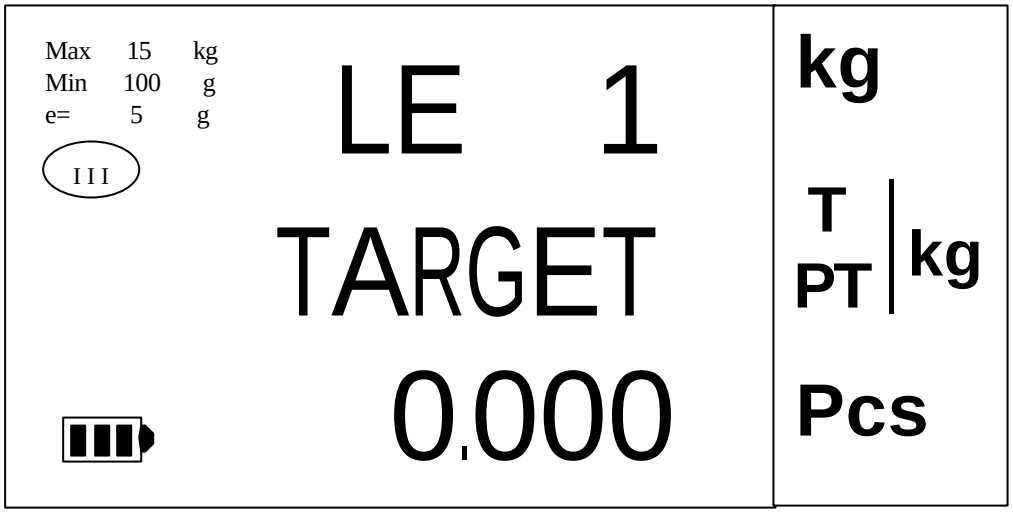
B.- Confirm the value with the key and program the next level value.

You can erase the data item entered, if it is incorrect, using the

key.

You can abort the operation at any time, returning to the Menu Mode, by pressing the S key.

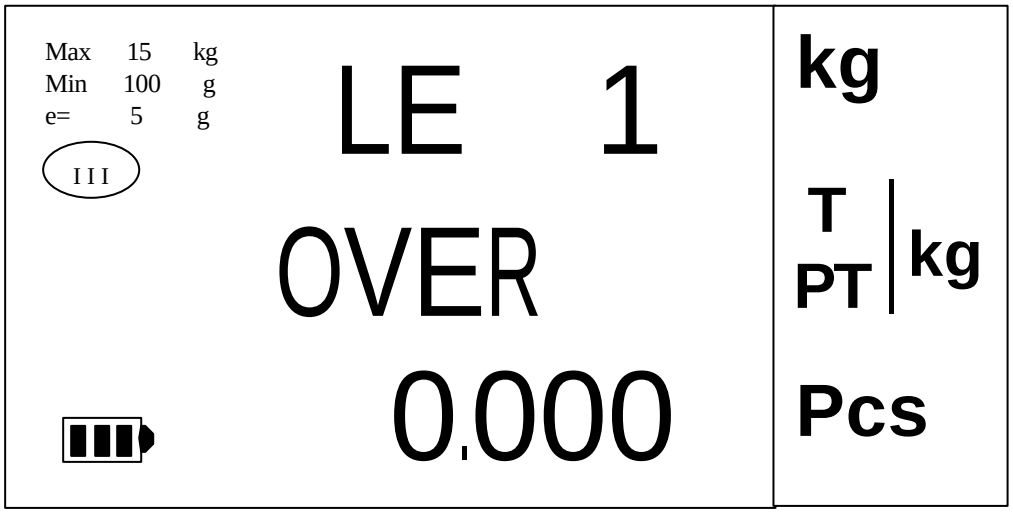
If you choose option 'B', you will program the level's Target value:



Enter the value with the numeric keys; you will have the same 2 options as when you entered the Under value.

You can erase the data item entered, if it is incorrect, using the C key. You can abort the operation at any time, returning to the Menu Mode, by pressing the S key.

If you choose option 'B', you will program the level's Over value:



Enter the value with the numeric keys; you will have the same 2 options as when you entered the Under value.

You can erase the data item entered, if it is incorrect, using the

key.

You can abort the operation at any time, returning to the Menu Mode, by pressing the

key.

If you choose option 'B', you will program the level's Under value.

9.1.4. Programming Unit Weights

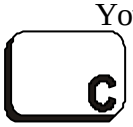
You can program up to 20 coded unit weights. While you are in the option:

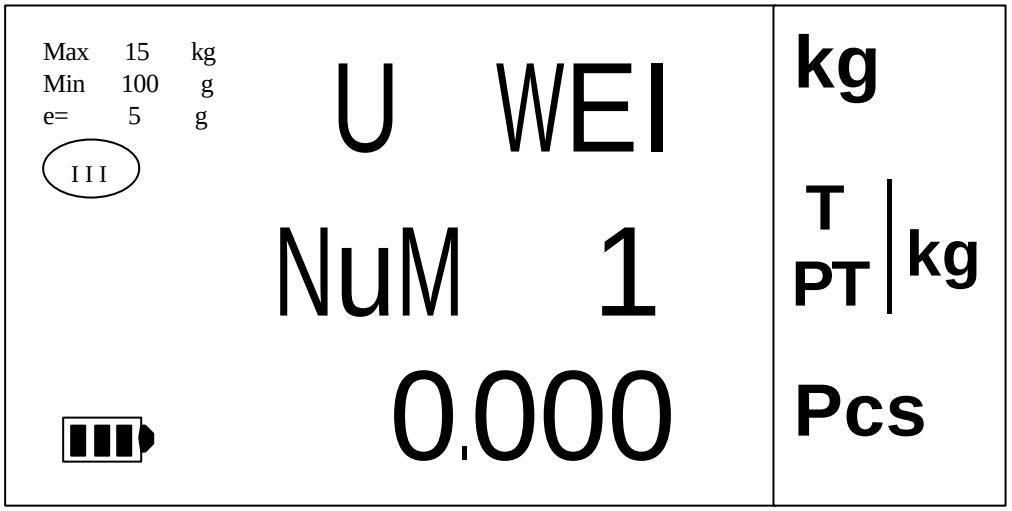
Press the

key to enter the option. The scale will prompt you for the Unit Weight number to be programmed (from 1 to 20):

Enter the number with the numeric keys (in the example, code '1') and

confirm with the key. The scale will prompt for the value of the unit weight.

You can erase the data item entered, if it is incorrect, using the  key. You can abort the operation at any time, returning to the Menu Mode, by pressing the key.



Enter the value with the numeric keys. If you make a mistake in entering the unit weight, you can erase it by pressing the key.

After you have entered the value, confirm by pressing the key.

The scale will then prompt you to program the next unit weight. You can exit the option at any time, saving the data confirmed so far, by pressing the key.

NOTE: The unit weight is reduced to a thousandth. In other words, 1.000 does not mean 1 kg, but 1 gram. The minimum unit weight for all capacities is limited to 1 g. The scale has a resolution of 60000 internal points and a full-scale error (Em):

Em=Sm*100 / 2*Pdm

Where:

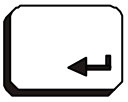
Em = error converted to % weight.
Sm = scale step.
Pdm = weight shown on part display.

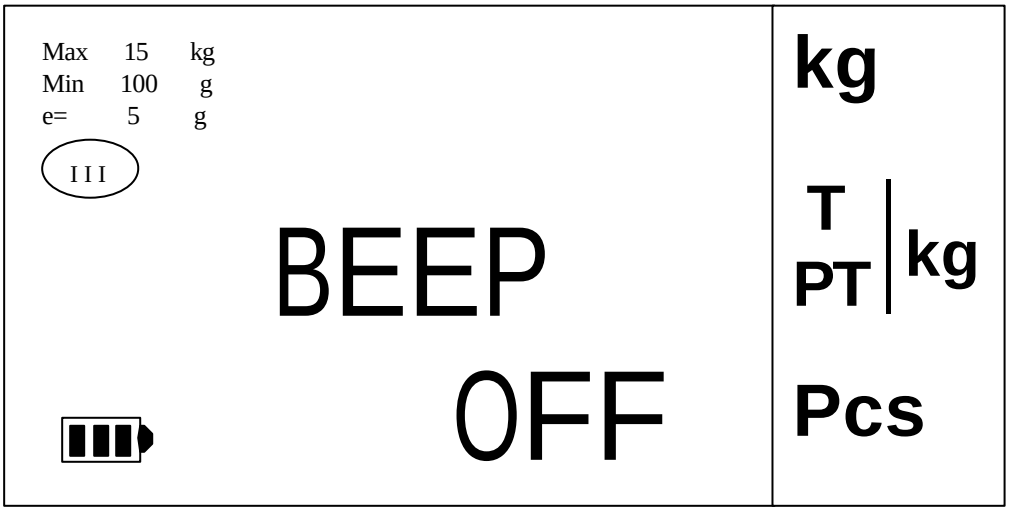
Always provided that the parts have an uniform shape and the same weight

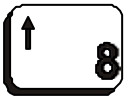
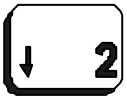
9.1.5. Programming the beep

This option allows you to enable or disable the beep for indicating ranges within the Basic Mode Levels.

While you are in the option:

Press the  key to enter the option. The present beep status will be displayed:



Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the  and  keys.

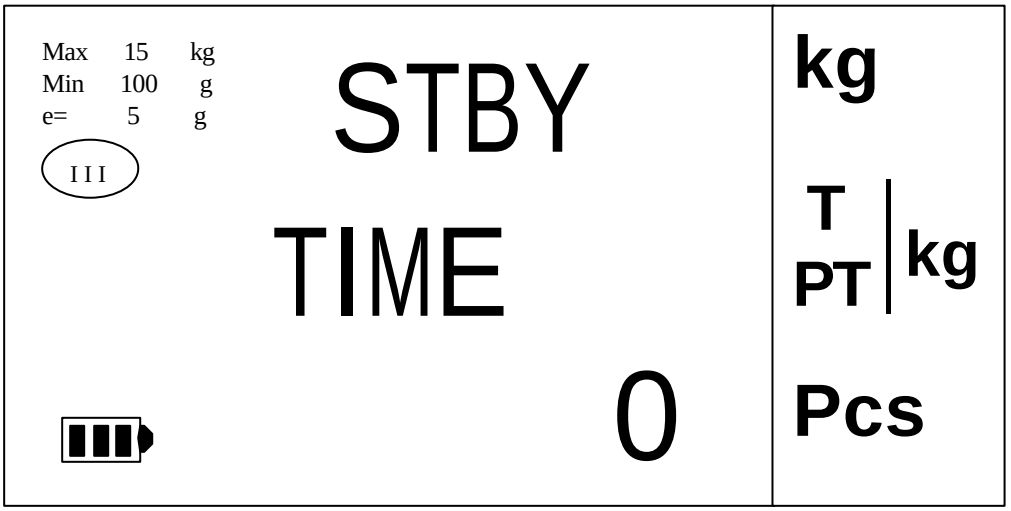
Confirm the status and return to the Menu by pressing the key. You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the key.

9.1.6. Standby time

This option allows you to select a time value in seconds after which the display and the back-light will go out if there is no activity on the scale, that is, key pressing or weight variation. During this status, 3 blinking dots will be shown on the tare display.

While you are in the option:

Press the key to enter the option:



Enter the time in seconds with the numeric keys (from 0 to 999). The value '**0**' will leave the standby disabled.

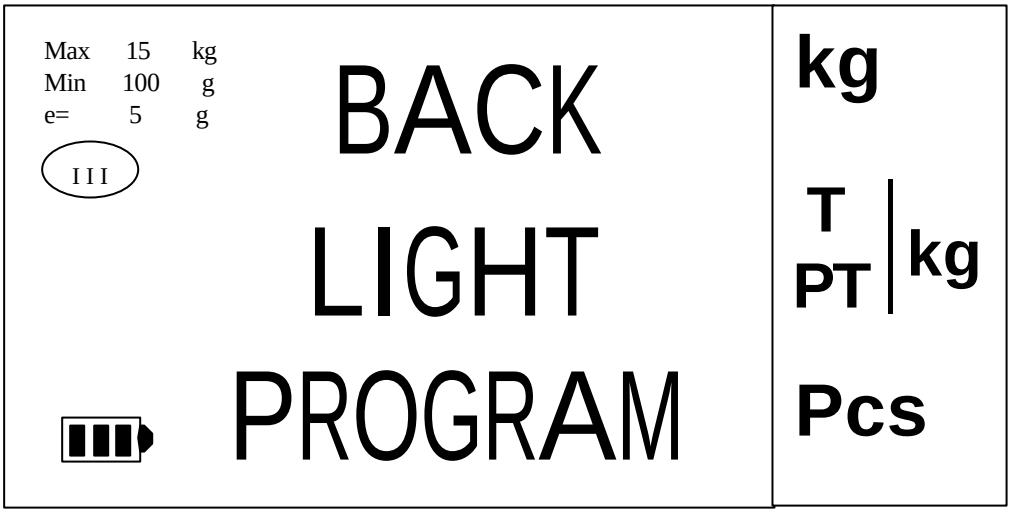
After entering the desired value, press the key to confirm and return to the Menu.

You can exit the option at any time, without validating the data item, and return to the Menu by pressing the key. You can also erase the data item

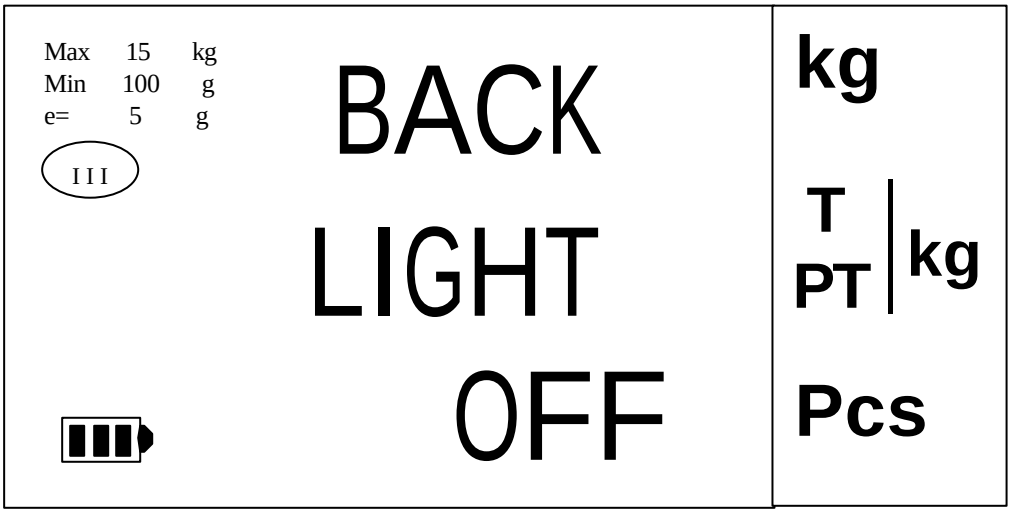
entered to rectify it by pressing the key.

9.1.7. Back-Light

This option allows you to enable or disable the display's back-light. While you are in the option:



Press the key to enter the option. The option's present status will be displayed:



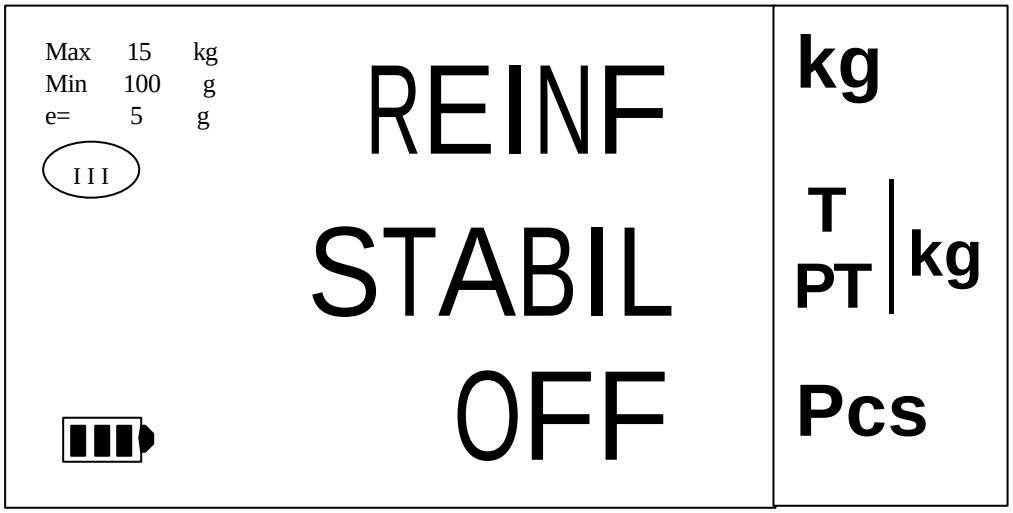
Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the and keys.

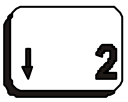
Confirm the status and return to the Menu by pressing the key. You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the key.

9.1.8. Enhanced stability

This option enhances the scale's stability criterion. While you are in the option:

Press the key to enter the option. The option's present status will be displayed:



Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the and  keys.

Confirm the status and return to the Menu by pressing the key. You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the key.

9.1.9. Special options

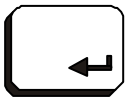
This will take you to the 2nd level Menu, which will allow you to modify the Installation Menu's non-metrological parameters. While you are in the option:

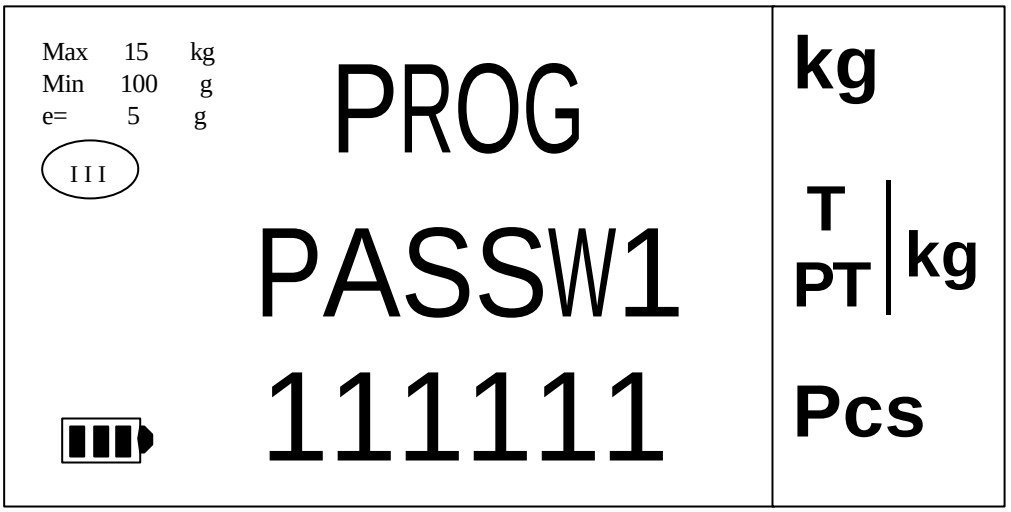
Press the key and you will go directly to the 2nd level Menu, which is described in a later section.

9.1.10. Programming the 1st Level password

This option allows you to program the password for access to the 1st Level Menu.

While you are in the option:

Press the  key to enter the option. You will see the password that has been programmed, if any, at that moment (by default, '**111111**'):



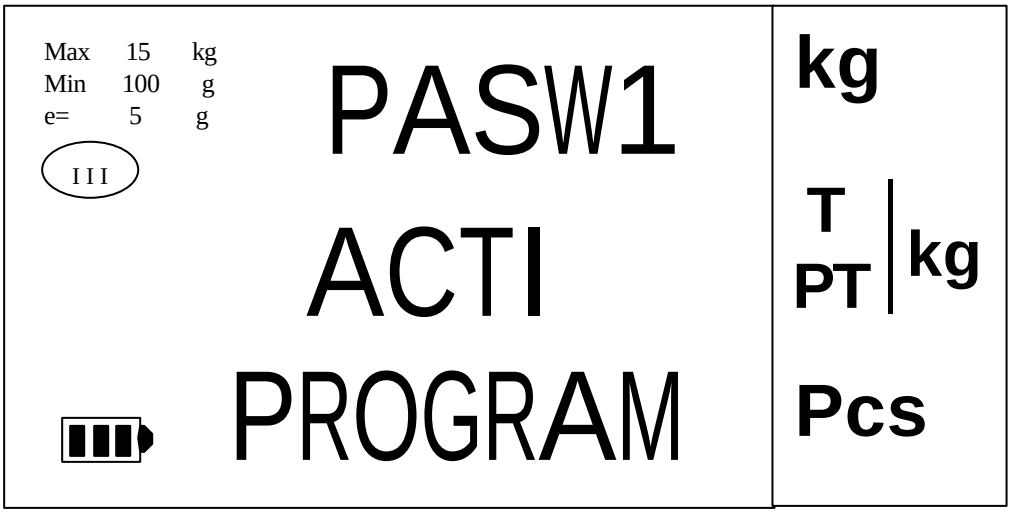
Enter the password using the numeric keys (6 digits).

After entering the desired password, press the key to confirm and return to the Menu.

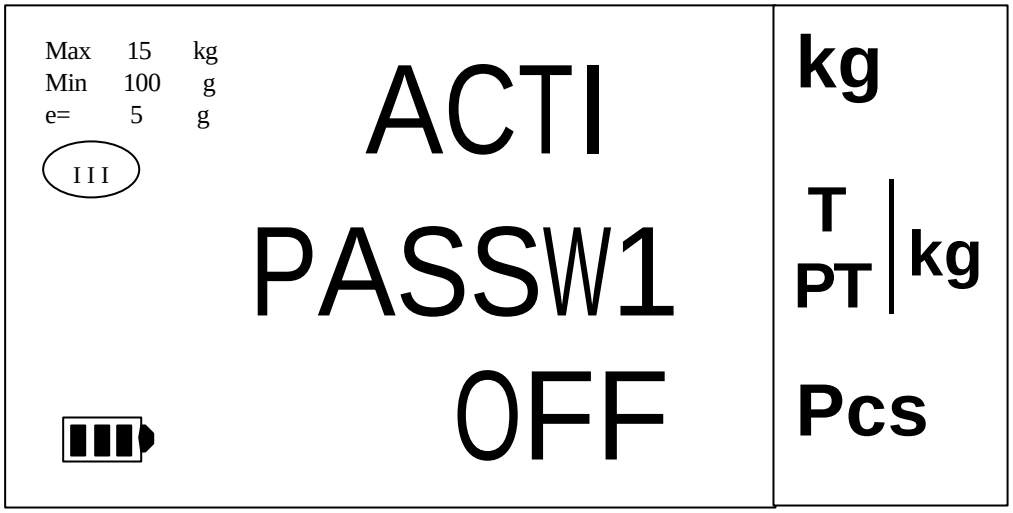
You can exit the option at any time without confirming the data and return to the Menu by pressing the key. You can also erase the data entered to rectify it by pressing the key.

9.1.11. Enabling the 1st Level password

This option enables or disables the password giving access to the 1st Level Menu. While you are in the option:



Press the key to enter the option. The option's current status will be displayed:

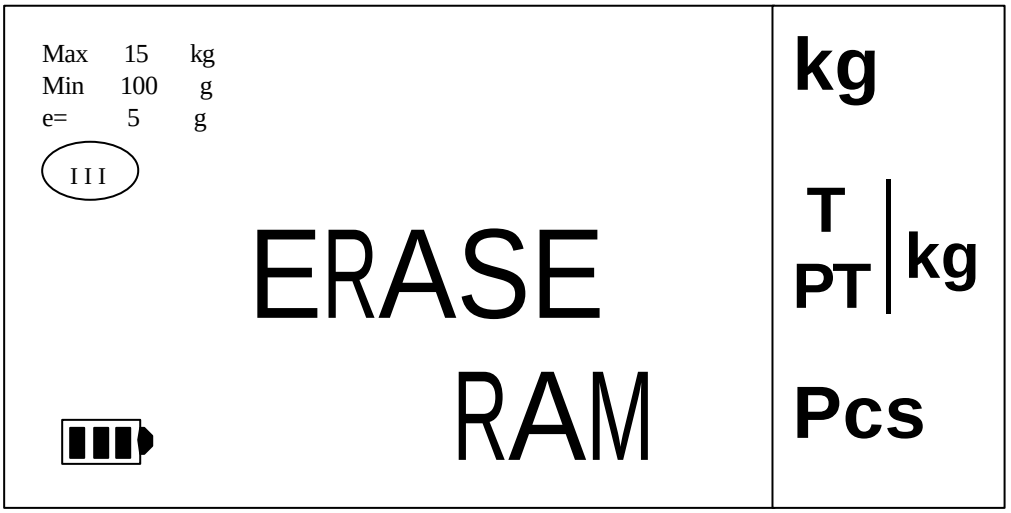


Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the 8 and 2 keys.

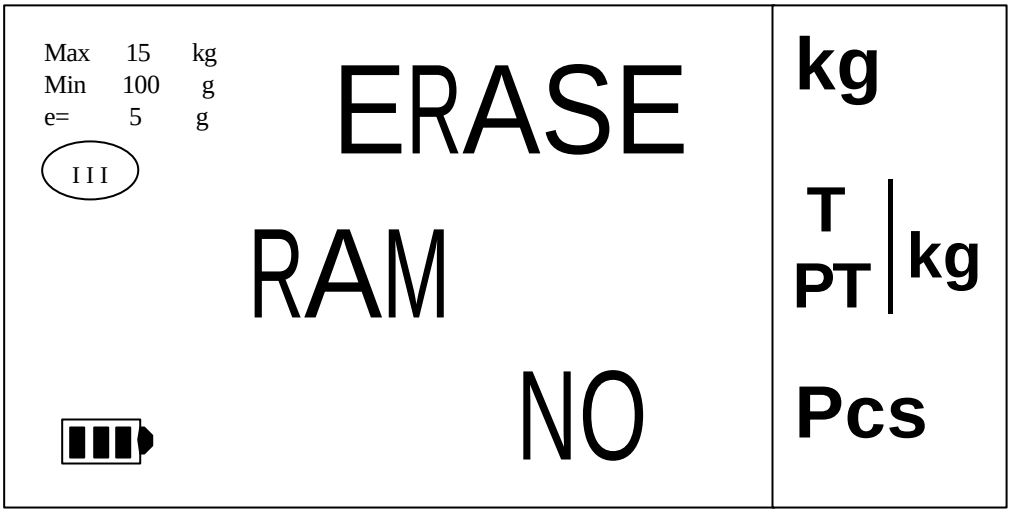
Confirm the status and return to the Menu by pressing the key. You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the S key.

9.1.12. Erasing the Ram

This option allows you to erase the Ram's variables. While you are in the option:



Press the key to enter the option:



Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the 8 and 2 keys.

When you press the key, if '**NO**' has been selected, you will return to the Menu Mode without erasing. If '**YES**' has been selected, the scale will perform the erase and will restart.

You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the S key.

9.1.13. Erasing the Eeprom

This option allows you to erase the memorizable values (Tares, Levels and Unit Weights). While you are in the option:

Press the key to enter the option:

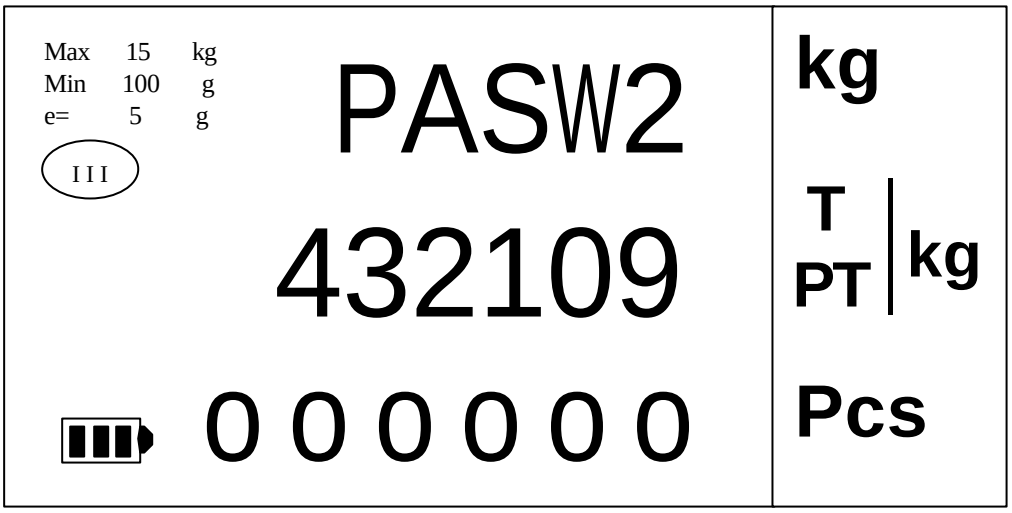
Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the 8 and 2 keys.

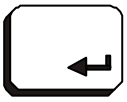
When you press the key, if '**NO**' has been selected, you will return to the Menu Mode without erasing. If '**YES**' has been selected, the scale will perform the erase and will restart.

You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the S key.

9.2 2nd LEVEL MENU

The 2nd level Menu is accessed as explained previously in point **9.1.9. 'SPECIAL OPTIONS'**. The scale will prompt you for the password giving access to the 2nd level Menu, if it is programmed:



Enter the 6-digit password programmed using the numeric keys and then confirm with the  key. You will now enter the 2nd level Menu:

At this point, you are now in the 2nd level Menu in this Menu's first programmable parameter, programming the 2nd level password.

9.2.1 Programming the 2nd level password

While displaying the password programmed, if any, at that time (by default, '**111111**'):

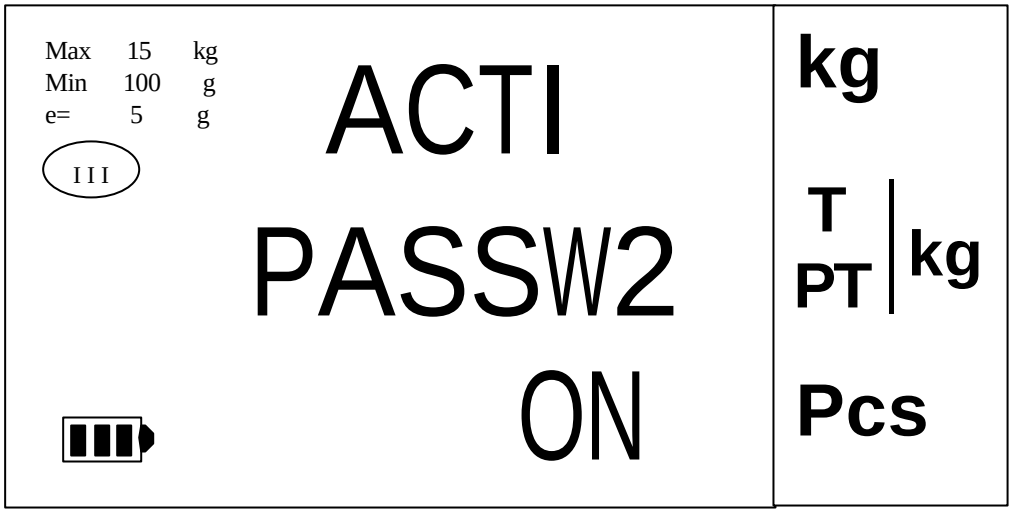
Enter the password using the numeric keys (6 digits).

After entering the desired password, confirm and go to the Menu's next programmable parameter by pressing the ↵ key.

You can exit the option at any time without confirming the data item and return to the Menu by pressing the S key. You can also erase the data item entered to rectify it by pressing the C key .

9.2.2 Enabling the 2nd level password

This option enables or disables the password giving access to the 2nd Level Menu. While you are in the option:

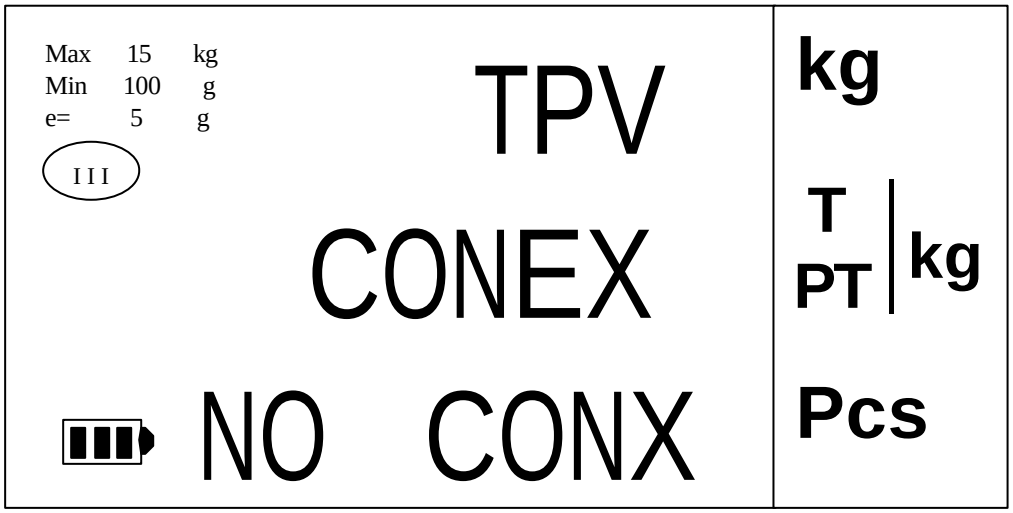


Toggle between '**ON**' (enabled) and '**OFF**' (disabled) pressing the 8 and 2 keys.

Confirm the status and return to the Menu by pressing the ↵ key. You can exit the option at any time, without confirming the data item, and return to the Menu by pressing the S key.

9.2.3 RS Connection

This selects the scale's RS-232 connection type.

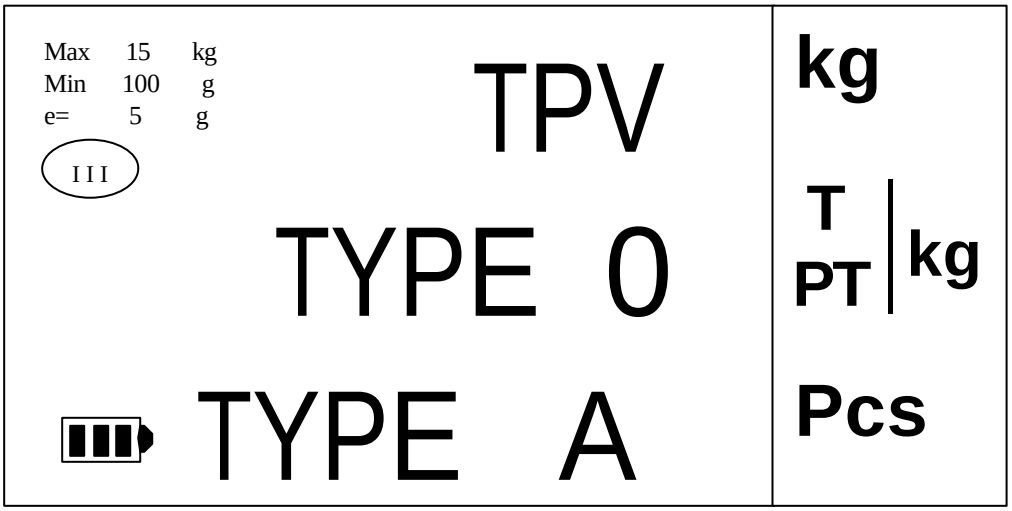


Select the value by pressing t[8] c[2] keys and confirm with the [↵] key. You will now go to the next parameter to be programmed.

Possible values	Default value
NO CONX	NO CONX
TYPE 0	
TYPE 1	
TYPE 2A	
TYPE 2B	
TYPE 7	
TYPE 8	
TYPE 9	
TYPE 10	

9.2.4 TPV Type (only if the connection type is 'TYPE 0')

This selects the communication type when operating with the 'TYPE 0' connection.

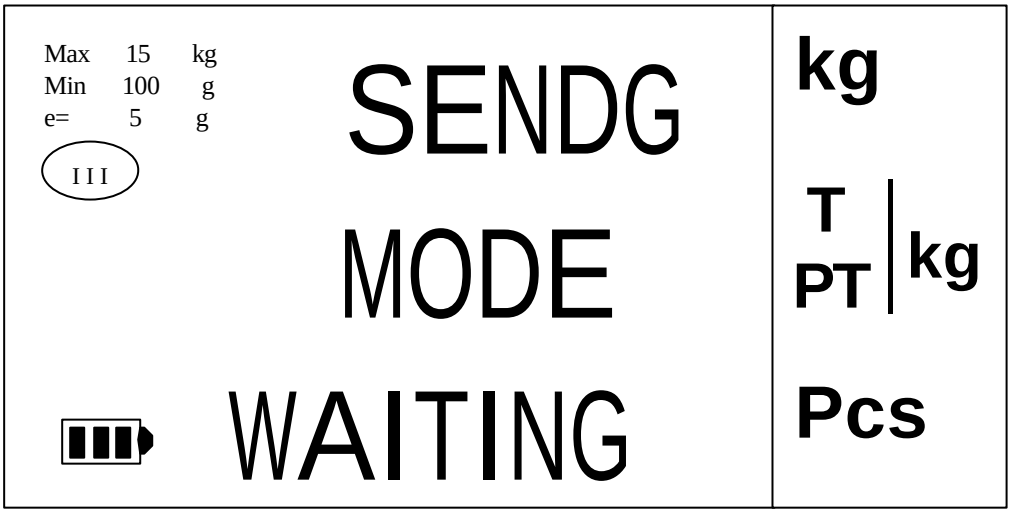


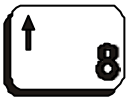
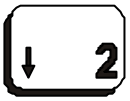
Select the value by pressing the [8] or [2] keys and confirm with the [↵] key. You will now go to the next parameter to be programmed.

Possible values	Default value
TYPE A	TYPE A
TYPE B	

9.2.5 Transmission mode (only if the connection type is 'TYPE 0')

The selects the data transmission mode when operating with a 'TYPE 0' connection.

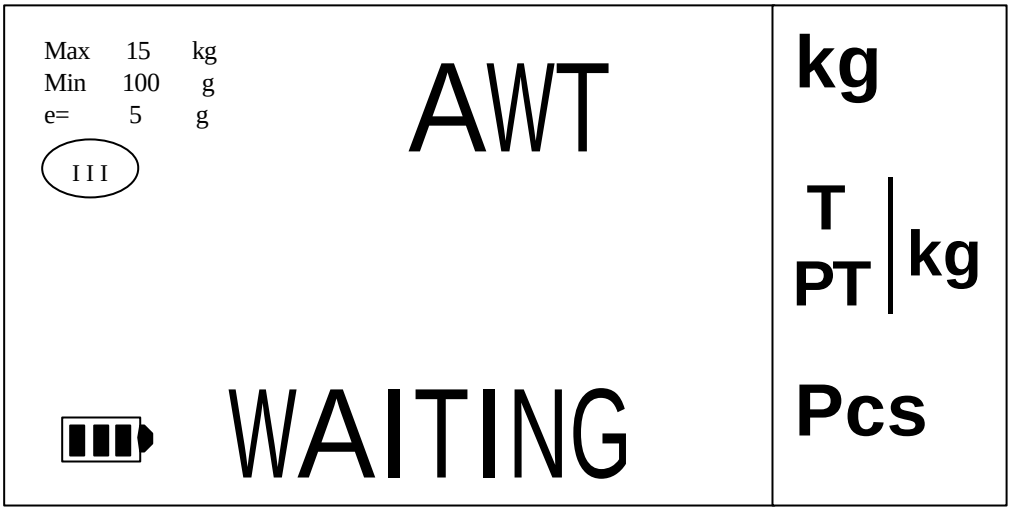


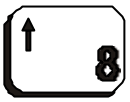
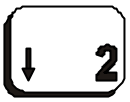
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
WAITING	WAITING
AUTOMAT	
MANUAL	

9.2.6 Automatic weight transmission (only if the transmission mode is 'AUTOMAT')

This selects the automatic weight transmission type when operating with the 'AUTOMAT' transmission mode.

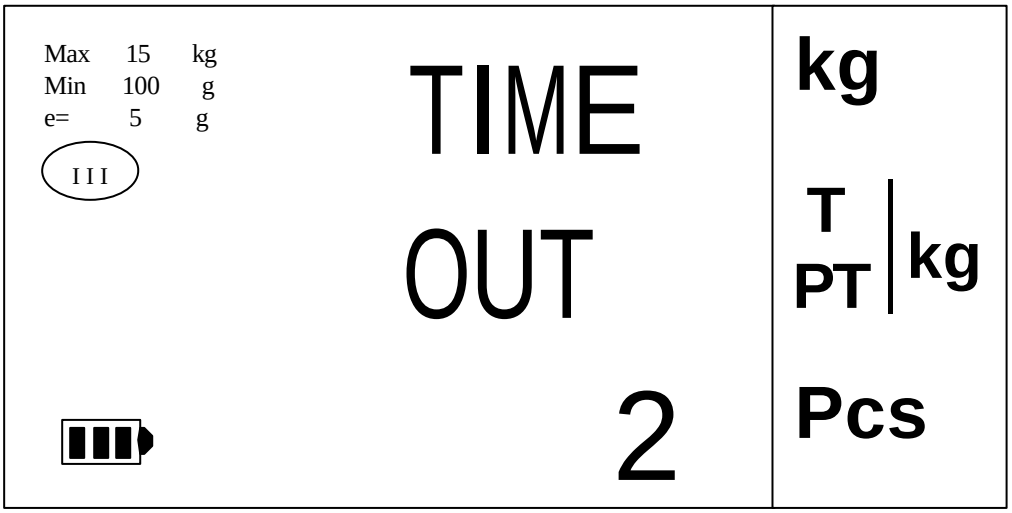


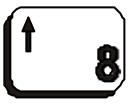
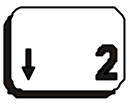
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed..

Possible values	**Default value**
WAITING	WAITING
MANUAL	

9.2.7 Time Out (only if the transmission mode is 'MANUAL' and type of TPV is 'TYPE B')

This selects the Time Out value (time waited to receive an answer after sending the weight) when operating with the 'MANUAL' transmission mode.

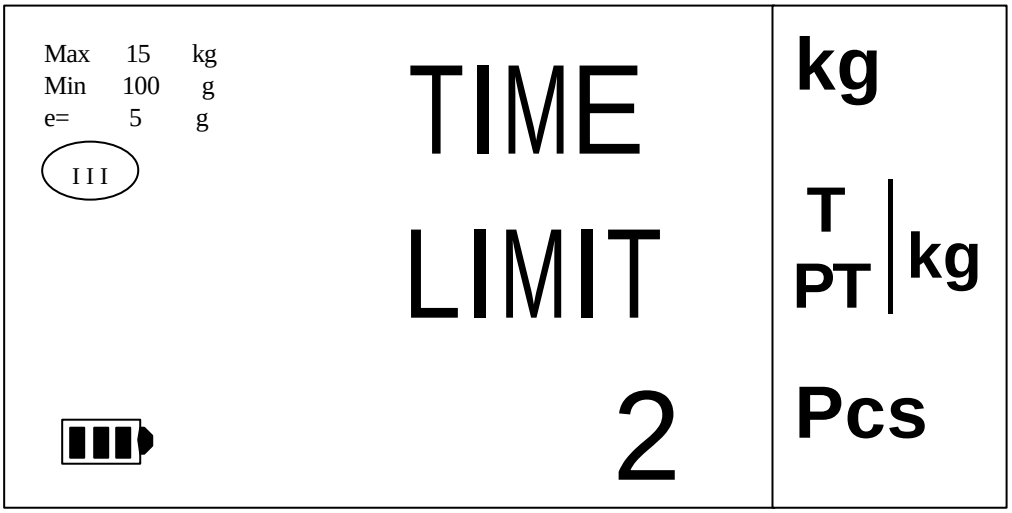


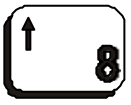
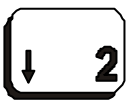
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
De 1 a 10	2

9.2.8 Time Limit (only if the transmission mode is 'MANUAL')

This selects the Time Limit value (time waited for a stable weight) when operating with the 'MANUAL' transmission mode.

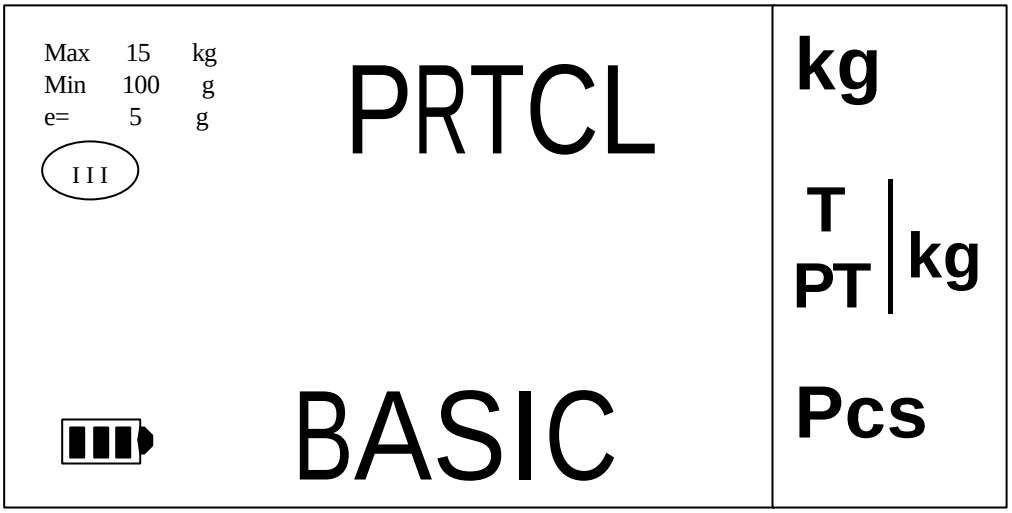


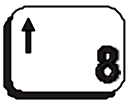
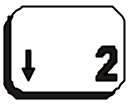
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
1 to 5	2

9.2.9 Protocol type (only if the connection type is 'TYPE 9')

This selects the active protocol type when operating with the 'TYPE 9' connection.

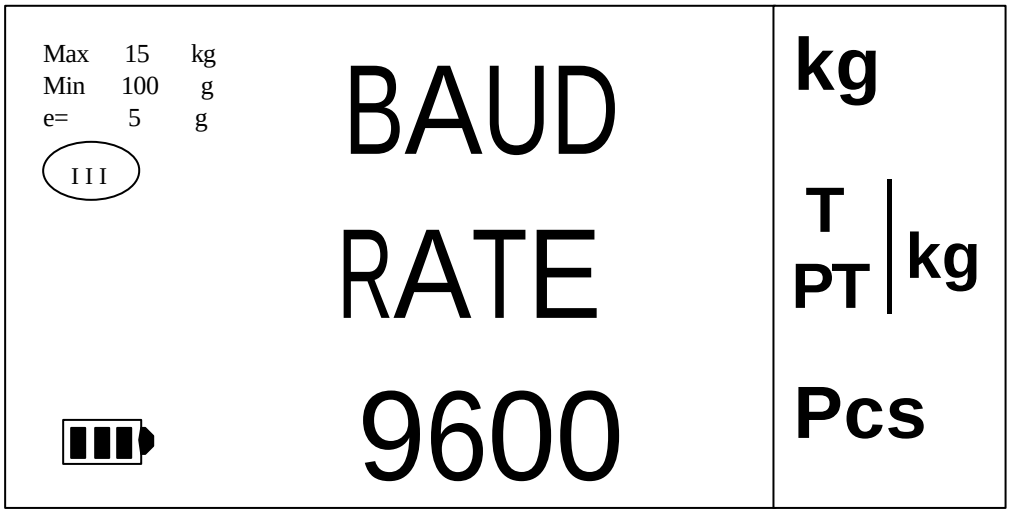


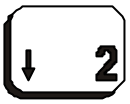
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
BASIC	BASIC
EXTEND	

9.2.10 Baud Rate (only if the connection type is different from 'NO CONX')

This selects the communication speed of the RS-232 channel.

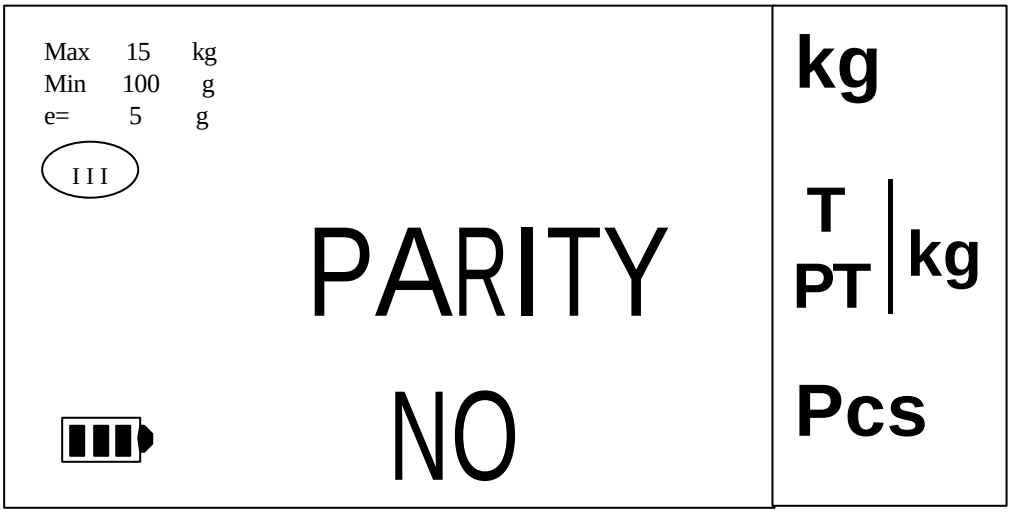


Select the value by pressing the or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
2400	9600
4800	
9600	
19200	

9.2.11 Parity (only if the connection type is different from 'NO CONX')

This selects the communication's parity type.

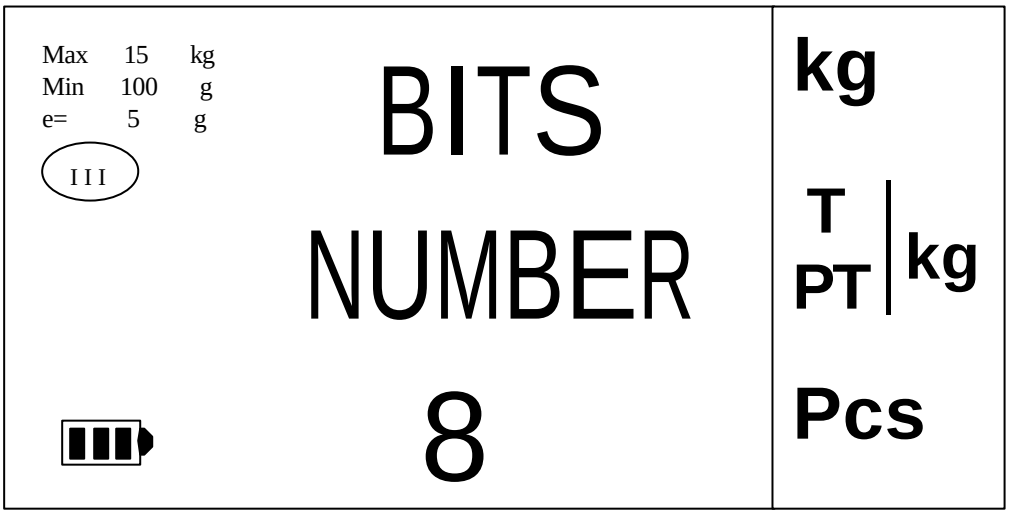


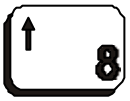
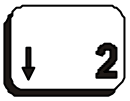
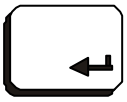
Select the value by pressing the or keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	Default value
NO	NO
EVEN	
ODD	

9.2.12 Number of bits (only if the connection type is different from 'NO CONX')

This selects the number of bits of the data transmitted and received.

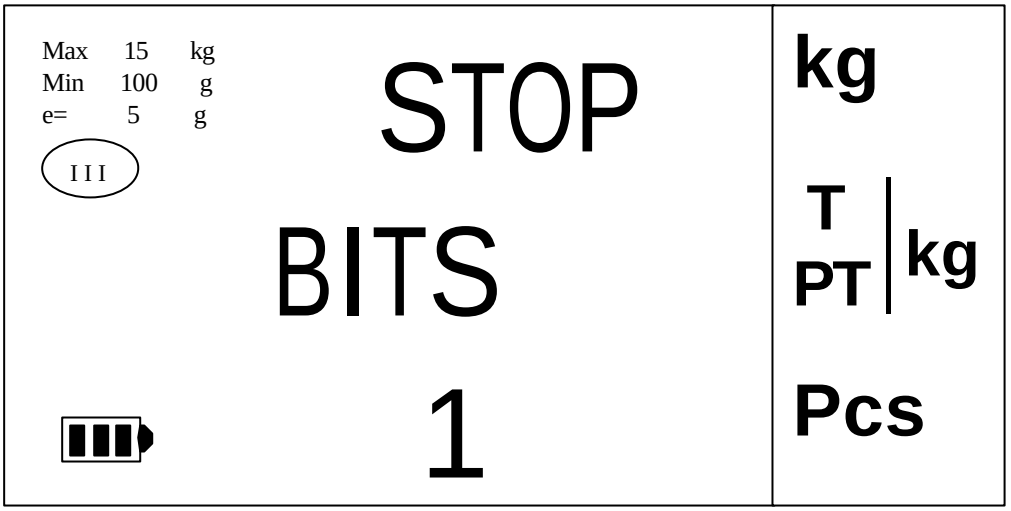


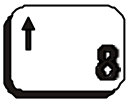
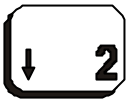
Select the value by pressing the  or  keys and confirm with the  key. You will now go to the next parameter to be programmed.

Possible values	Default value
7	8
8	

9.2.13 Number of stop bits (only if the connection type is different from 'NO CONX')

This selects the communication's number of stop bits.



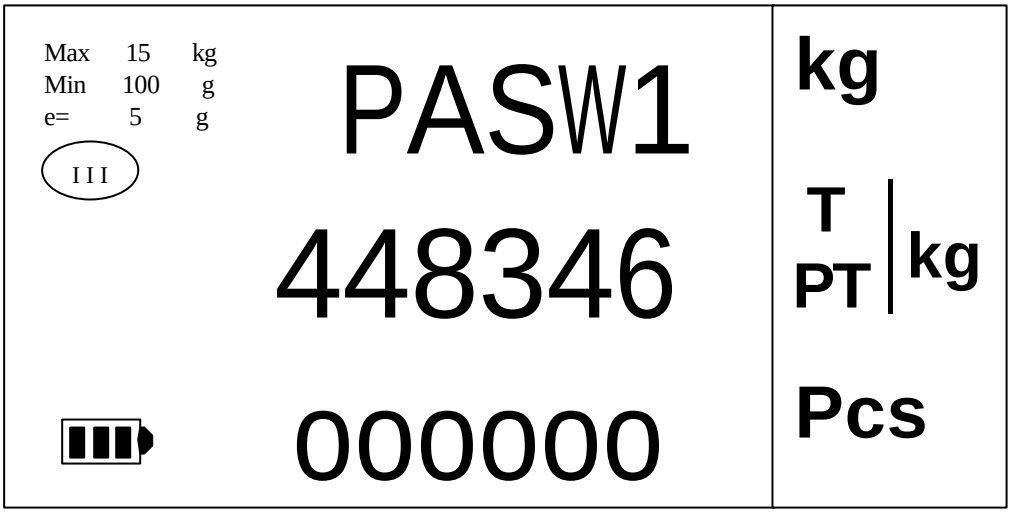
Select the value by pressing the  or  keys and confirm with the key. You will now go to the next parameter to be programmed.

Possible values	**Default value**
1	1
2	

When you confirm this parameter with the key, all the parameters will be considered confirmed and the scale will return to the 1st Level Menu in the '**SPECI OPTION**' option.

10 CONVERSION OF THE ENCRYPTED CODE

If you forget the menu passwords, you can find them by converting the encrypted code that appears when you are prompted for the password:



Encrypted code: 4 4 8 3 4 6

Digit position: 5 4 3 2 1 0

The following subtraction must be performed:
Digit of the encrypted code (DIG) – Position of the digit of the encrypted code (POS).

If the result of the subtraction is negative, add 10 to the value obtained.

DIG	-	POS		
4	-	5	<	0 -------→ (4 + 10) –5 = 9
4	-	4	>	0 -------→ 4 – 4 = 0
8	-	3	>	0 -------→ 8 – 3 = 5
3	-	2	>	0 -------→ 3 – 2 = 1
4	-	1	>	0 -------→ 4 – 1 = 3
6	-	0	>	0 -------→ 6 – 0 = 6

Look up the values in the table and their position will give the digit of the final code.

TABLE: (7, 9, 0, 5, 1, 3, 6, 2, 4, 8)
POSITION: (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)

Number 9 in the table has position **1**.
Number 0 in the table has position **2**.
Number 5 in the table has position **3**.
Number 1 in the table has position **4**.
Number 3 in the table has position **5**.
Number 6 in the table has position **6**.

(The access code to the menu is **123456)**

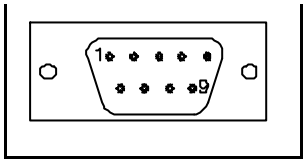
11 LIST OF POSSIBLE ERRORS

ERROR NUMBER	CAUSE
9	TIMEOUT – Zero and reference capture time exceeded.
10	NAK reception in communications 'TYPE 0', 'TYPE B' and key.
14	UNSTABLE WEIGHT.
35	INCORRECT CHECKSUM– Series E2prom read error.
51	NOVRAM WRITE.
60	INVALID DATA.
61	DATA TOO LARGE – If the set weight is less than 20000 net points. If a Plu greater than 100 is requested. If an item is programmed with a value greater than that allowed.
62	DATA TOO SMALL – If the set weight is greater than 85000 net points. If Plu 0 is requested. If there is any scale parameter with an incorrect value.
63	NULL DATA – If the set weight entered is 0.
64	WEIGHT OUT OF RANGE – Tare out of range.
65	INCORRECT WEIGHT – If the set weight entered is not a multiple of the step.

12 CONNECTIONS

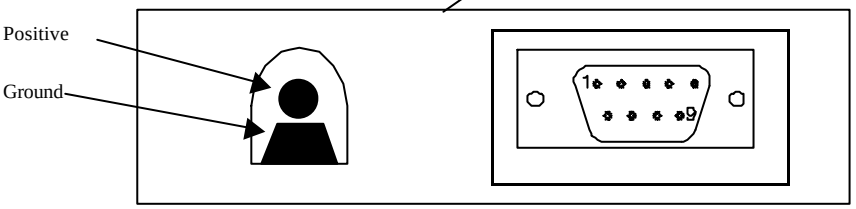
RS-232 CONNECTOR

NOTE: The RS-232 PC cable must be installed before powering on the scale.



1 -
2 – Rx+
3 – Tx+
4 -
5 – GND

Scale ON/OFF button



External supply connector

RS-232 connector

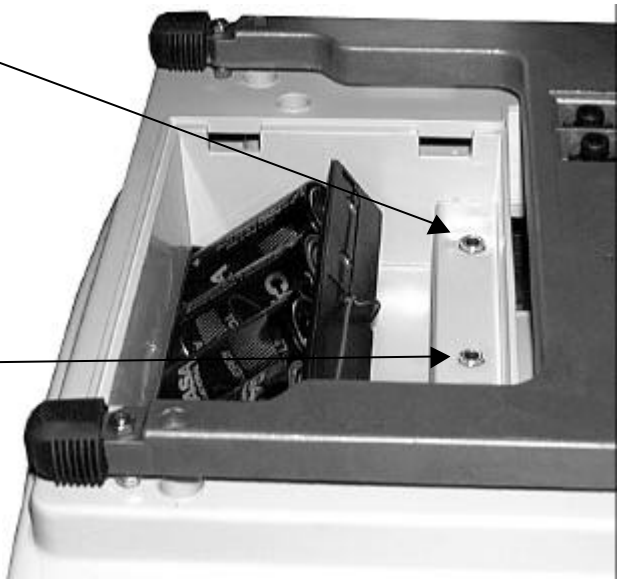
Calibration button access hole

The scale can be powered from an external power supply through its external connector (using the car battery, for example) as it operates with a voltage of 12Vdc.

Lift the scale platform to access the non-rechargeable or rechargeable battery (optional) compartment.

Non-rechargeable battery conector (5 batteries 1.5V R-20).

Internal battery connector (6V, 10A, rechargeable).



13 BATTERY LIFE

ECO MULTIFUNCTION Model

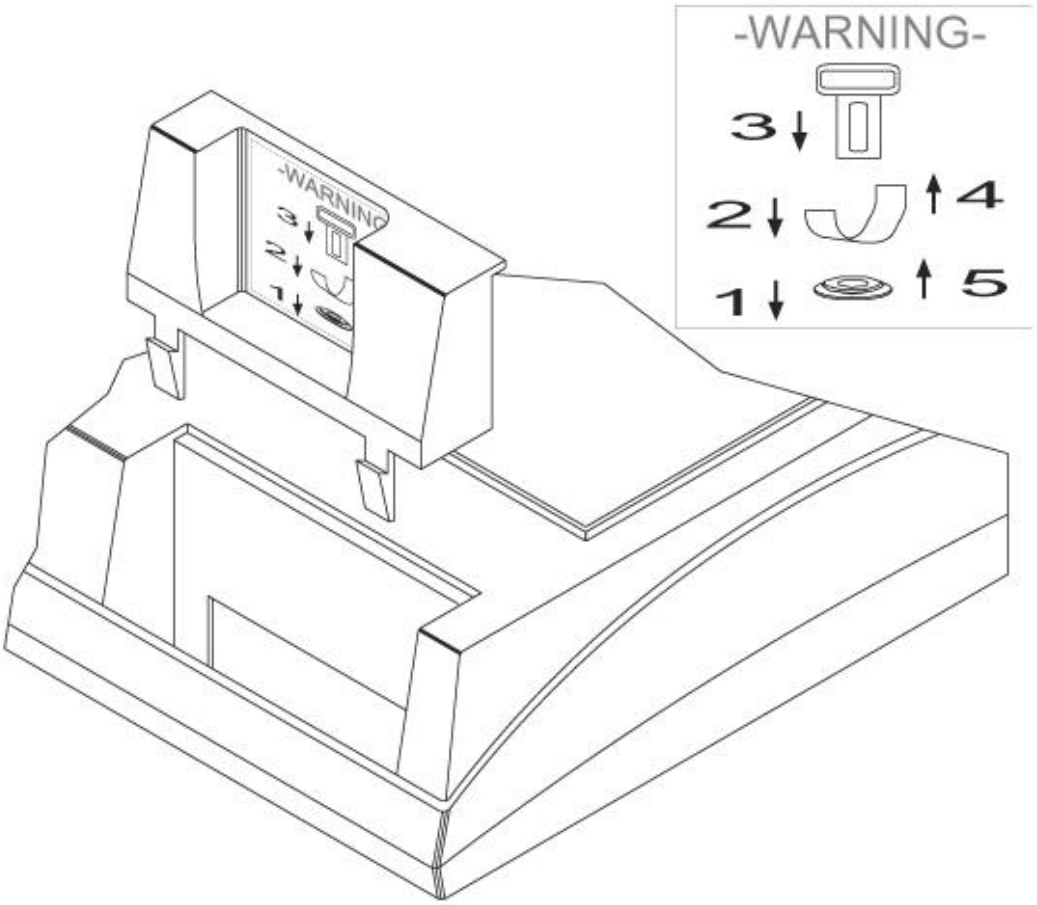
- With 5 alkaline batteries: up to **150 h**.
- With the internal battery: **150 h**.
- With the automatic Back Light option (25% of the time lit): up to **120 h.**

ENVIRONMENTAL NOTICE:

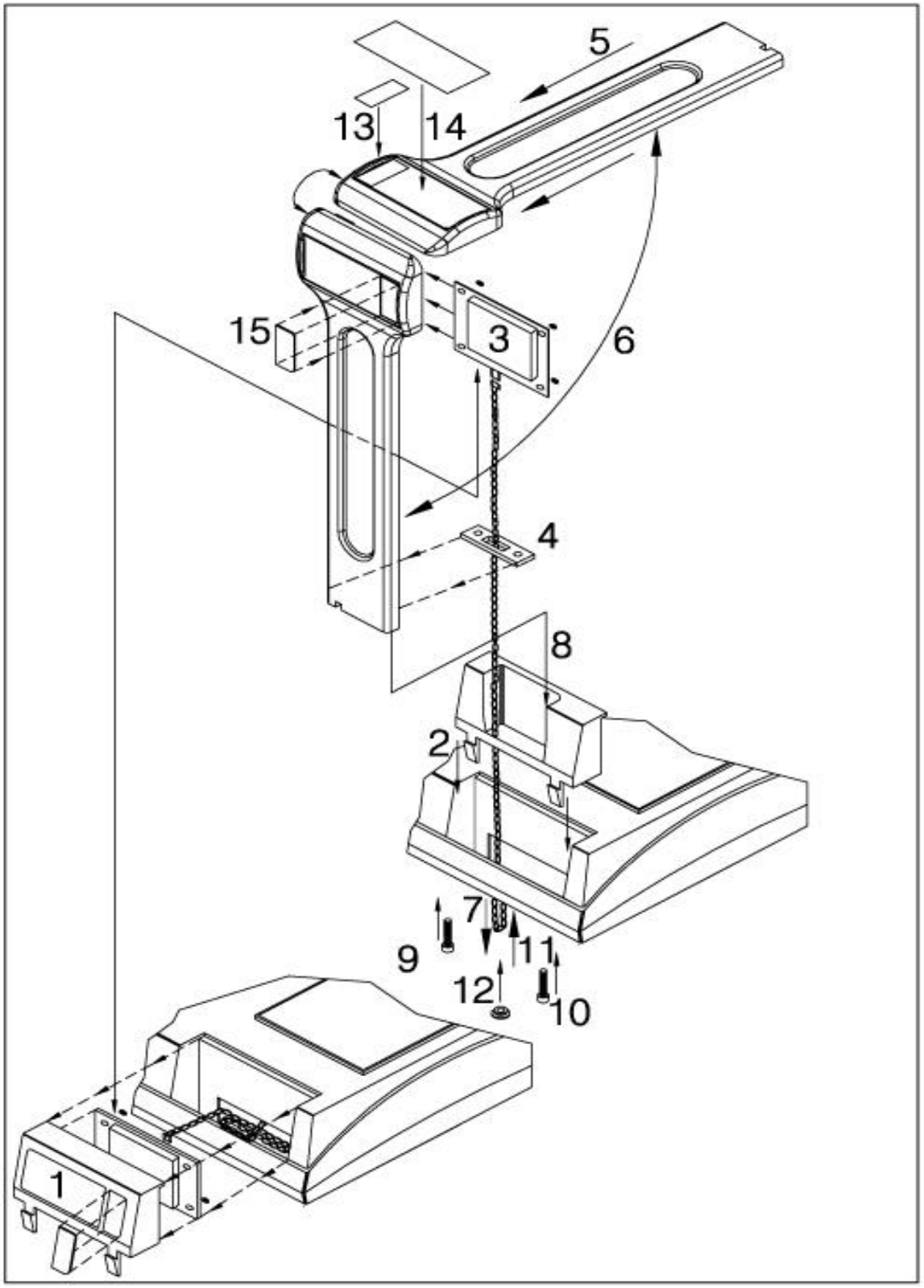
This scale can operate with alkaline or rechargeable batteries. To protect the environment, do not throw the batteries away at the end of their service life. Remove them and dispose of them in the places provided for this, as stipulated in current legislation.

14. ASSEMBLY OF ELEVATED COLUMN (for model with column)

1



2



Note: The manufacturer reserves the right to modify this unit's operation and specifications without prior notice.

Warranty GRUPO EPELSA S.L.

Pursuant to current legislation, **GRUPO EPELSA S.L**. offers the user, in accordance with the terms described on this card, a full warranty against faulty workmanship in the product or **GRUPO EPELSA S.L**. components included in it.

1. Terms and application of the warranty

The **GRUPO EPELSA S.L**. warranty **covers**:

- Repair of the unit identified below by an Official **GRUPO EPELSA S.L.** Service Center
- Components, spare parts and labor used for the product and all the parts and components, provided that they are original **GRUPO EPELSA S.L.** materials

The **GRUPO EPELSA S.L**. warranty **does not cover:**

- Errors caused by non-original components.
- Faults caused by incorrect installation.
- Damage caused by negligence, wear and tear, or errors as a result of repairs carried out by unauthorized personnel.
- If the details on this card have been altered or tampered with.
- If the seals are broken or tampered with.
- The fees and costs of official inspections required by regulations.

2. Warranty period

The warranty period is 1 year. For any claim under this guarantee, you must provide the purchase invoice and this warranty card.

Identification of the unit

Model : _____ Serial no. : _____

Holder of the warranty

Company : _____ Address : _____ VAT No. : _____

Albasanz 6 y 8 28037 Madrid
Tel. : 91.754.30.14. Fax : 91.754.48.26 e-mail : info@epelsa.com

Ctra. Sta. Cruz de Calafell, 35 08830 Sant Boi (Barcelona)
Tel. : 93.654.62.12. Fax : 93.654.54.53 e-mail : info@epel-ind.com

WITH THE WARRANTY OF:

GRUPO EPELSA S.L.

ALBASANZ, 6 y 8 28037 MADRID
TEL. (91) 754-30-14, FAX: (91) 754-48-26 e-mail:info@epelsa.com
CTRA. SANTA CRUZ DE CALAFELL , 35
08830 SANT BOI DE LLOBREGAT (BARCELONA-SPAIN)
TEL. (93) 654-62-12, FAX: (93) 654-54-53 e-mail:info@epel-ind.com
http//www.epel-ind.com